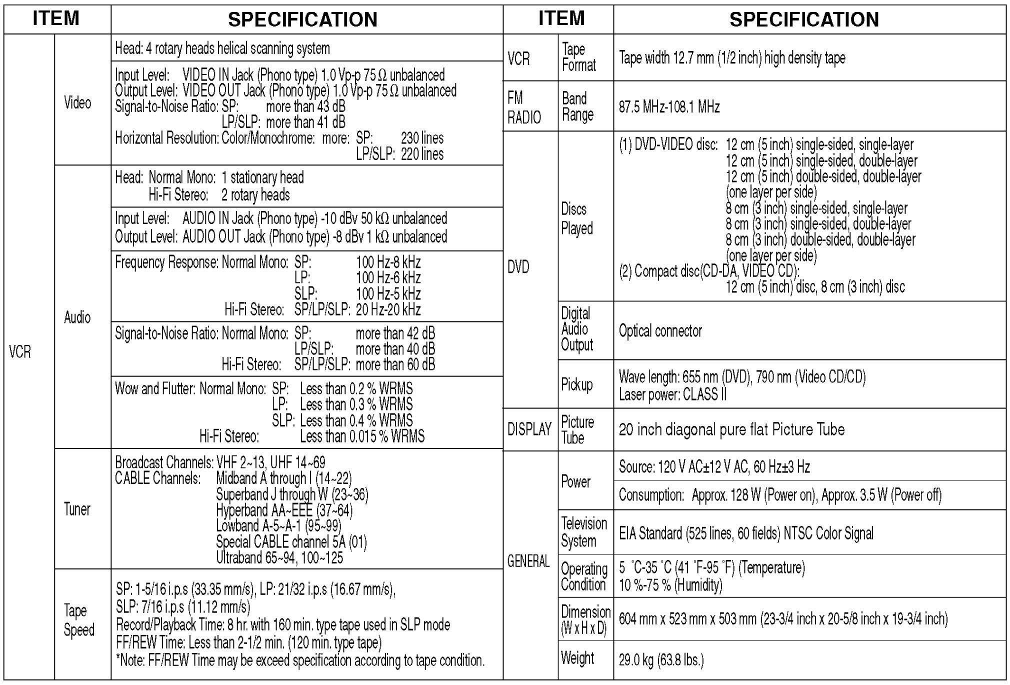
ORDER NO. MKE0206604C1
B22

Service Manual

TV/DVD/VCR Combination

PV-DF2002

SPECIFICATIONS



ITEM		SPECIFICATION
VCR	Video	Head: 4 rotary heads helical scanning system
		Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75 Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more: SP: 230 lines LP/SLP: 220 lines
	Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
		Input Level: AUDIO IN Jack (Phono type) -10 dBv 50 kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1 kΩ unbalanced
		Frequency Response: Normal Mono: SP: 100 Hz-8 kHz LP: 100 Hz-6 kHz SLP: 100 Hz-5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz-20 kHz
		Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB
		Wow and Flutter: Normal Mono: SP: Less than 0.2 % WRMS LP: Less than 0.3 % WRMS SLP: Less than 0.4 % WRMS Hi-Fi Stereo: Less than 0.015 % WRMS
	Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A through I (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125
	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/s), LP: 21/32 i.p.s (16.67 mm/s), SLP: 7/16 i.p.s (11.12 mm/s) Record/Playback Time: 8 hr. with 160 min. type tape used in SLP mode FF/REW Time: Less than 2-1/2 min. (120 min. type tape) *Note: FF/REW Time may be exceed specification according to tape condition.

ITEM		SPECIFICATION
VCR	Tape Format	Tape width 12.7 mm (1/2 inch) high density tape
FM RADIO	Band Range	87.5 MHz-108.1 MHz
DVD	Discs Played	(1) DVD-VIDEO disc: 12 cm (5 inch) single-sided, single-layer 12 cm (5 inch) single-sided, double-layer 12 cm (5 inch) double-sided, double-layer (one layer per side) 8 cm (3 inch) single-sided, single-layer 8 cm (3 inch) single-sided, double-layer 8 cm (3 inch) double-sided, double-layer (one layer per side) (2) Compact disc(CD-DA, VIDEO CD): 12 cm (5 inch) disc, 8 cm (3 inch) disc
	Digital Audio Output	Optical connector
	Pickup	Wave length: 655 nm (DVD), 790 nm (Video CD/CD) Laser power: CLASS II
DISPLAY	Picture Tube	20 inch diagonal pure flat Picture Tube
GENERAL	Power	Source: 120 V AC±12 V AC, 60 Hz±3 Hz
		Consumption: Approx. 128 W (Power on), Approx. 3.5 W (Power off)
	Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal
	Operating Condition	5 °C-35 °C (41 °F-95 °F) (Temperature) 10 %-75 % (Humidity)
	Dimension (W x H x D)	604 mm x 523 mm x 503 mm (23-3/4 inch x 20-5/8 inch x 19-3/4 inch)
	Weight	29.0 kg (63.8 lbs.)

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

© 2002 Matsushita Kotobuki Electronics Industries LTD. All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential thatthese critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. **An Isolation Transformer should always be used during the**

servicing of Combination DVD VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resultingin personal injury from electrical shocks. It will also protect Combination DVD VCR from being damaged by accidental shorting that may occur during servicing.

3. **When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
4. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations are properly installed.**
5. **Before turning the receiver on, measure the resistance between B+ line and chassis ground. Connect (-) side of an ohmmeter to the B+ lines, and (+) side to chassis ground. Each line should have more resistance than specified,as follows :**

B+ Line	**Minimum Resistance**
130 V	**1 kΩ (Cold chassis ground)**
27 V	**180 Ω (Cold chassis ground)**
210 V	**1 kΩ (Cold chassis ground)**

6. **When the TV set is not used for a long period of time, unplug the power cord from the AC outlet.**
7. **Potentials, as high as 30.0 kV are present when this TV set is in operation. Operation of the TV set without the rear cover involves the danger of a shock hazard from the TV set power supply. Servicing should not be attempted by anyone who isnot thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the CRT ground of receiver before handling the**

tube.

8. **After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

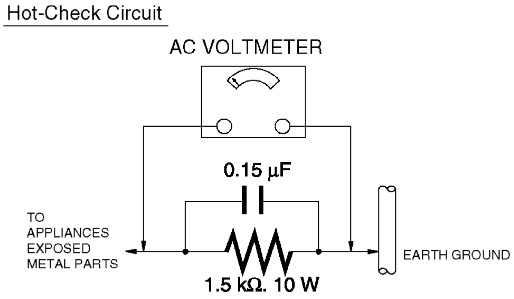
1.2. LEAKAGE CURRENT COLD CHECK

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **For physically operated power switches, turn power on. Otherwise skip step 2.**
3. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the readingshould be between 1 M Ω and 12 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.**

1.3. LEAKAGE CURRENT HOT CHECK

1. **Plug the AC cord directly into the AC outlet.**
   Do not use a isolation transformer for this check.
2. **Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.**
3. **Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 V RMS.**
   A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and thereceiver should be repaired and rechecked before it is returned to the customer.

Figure 1



2. X-RADIATION

WARNING :

1. **The potential source of X-Radiation in TV sets is the High Voltage section and the picture tube.**
2. **When using a picture tube test fixture for service, ensure that the fixture is capable of handling 34.5 kV without causing X-Radiation.**

NOTE:

It is important to use an accurate periodically calibrated high voltage meter.

1. **Reduce the brightness to minimum.**
2. **Set the SERVICE switch to SERVICE .**
3. **Measure the High Voltage. The meter reading should indicate 28.5 kV±1.5 kV.**
   If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
4. **To prevent an X-Radiation possibly, it is essential to use the specified picture tube.**

2.1. HORIZONTAL OSCILLATOR DISABLE CIRCUIT TEST

SERVICE WARNING :

The test must be made as a final check before set is returned to the customer.

1. **With the rear cover removed, supply about a 120 V AC power source to the set, turn on the set.**
2. **Set the customer controls to normal operating positions.**
3. **Short between TP891 and TP892 on the Main circuit board with a jumper wire. Confirm that the picture goes out of horizontal sync.**

4. **If this does not occur, the horizontal oscillator disable circuit is not operating. Follow the Repair Procedures of horizontal oscillator disable circuit before the set is returned to customer.**

2.2. REPAIR PROCEDURES OF HORIZONTAL OSCILLATOR DISABLE CIRCUIT

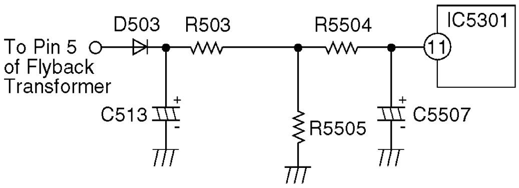
1. **Connect a DC voltmeter between capacitor C513 (+) on the Main circuit board and chassis ground.**
2. **If approximately +21.5 V is not present at that point when 120 V AC is applied, find the cause. Check R503, R5505, C5507, C513 and D503.**
3. **Carefully check above specified parts and related circuits and parts. When the circuit is repaired, try the horizontal oscillator disable circuit test again.**

2.3. CIRCUIT EXPLANATION

2.3.1. HORIZONTAL OSCILLATOR DISABLE CIRCUIT

The positive DC voltage, supplied from the D503 cathode for monitoring high voltage, is applied to the IC5301 Pin11 through R503 and R5504. Under normal conditions, the voltage at IC5301 Pin 11 is less than approx. 3 V. If the high voltage at FlybackTransformer Pin 5 exceeds the specified voltage, the positive DC voltage which is supplied from the D503 cathode also increases. The increased voltage is applied to IC5301 Pin11 through R503 and R5504. Due to the increased voltage at IC5301 Pin11,the horizontal oscillator frequency increases, the picture goes out of horizontal sync, the beam current decreases and the picture become dark in order to keep X-radiation under specification.

Figure 2



2.4. LASER PRODUCT

CLASS I LASER PRODUCT

- **This equipment is certified to comply with DHHS Rules 21 CFR Chapter 1, Subchapter J in effect as of date of manufacture. (Only for U.S.A.)**

This equipment is classified as a Class I (Class 1) level LASER Product and there is no hazardous LASER radiation with the safety protection.

Caution:

Use of controls or adjustments or performance of procedures other

than those specified herein may result in hazardous radiation exposure.

Never touch the internal parts in order to avoid EXPOSURE TO VISIBLE LASER RADIATION.
Unplug the AC power cord to the equipment when opening the top cover.
When the power switch is On, do not place your eyes close to the front panel opening door or the other openings to look into the interior unit.
LASER Specification
Class I level A LASER Product (Class 1 level A LASER Product)

Wave Length:

647 - 677 nm (at DVD)
775 - 815 nm (at CD)

Laser Power:

No hazardous radiation is emitted with the safety protection.

2.5. PRECAUTION OF LASER DIODE

CAUTION:

This unit utilizes a class III a laser. Visible laser radiation is emitted from the optical pickup lens when the unit is turned on:

1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufactures specified replacement pickup only.
6. Use of control or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

3. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsare semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or

semiconductor-equipped assembly, drain off any ESD on your body touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, whichshould be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparableconductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION:

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficient to damage an ES device).

"NOTE to CATV system installer :

This reminder is provided to call the CATV system installer’s

attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding systemof the building, as close to the point of cable entry as practical."

4. OPERATION GUIDE

5. SERVICE NOTES (PLEASE READ)

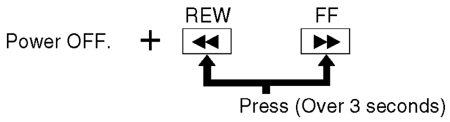
5.1. SERVICE NOTES

5.1.1. SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit fault code and communication for I$_2$C bus code will be displayed on TV screen.
The Simplified Fault finding data is stored in the Memory IC (IC6004). This data is cleared after it is displayed, and then the POWER button is pressed back on.

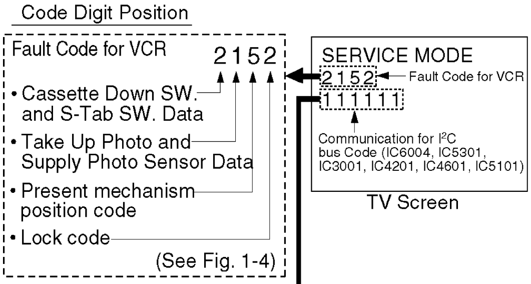
1. With power turned off, press FF and REW buttons on unit together for over 3 seconds.

Fig. 1-1


REW
FF
Power OFF.
+
Press (Over 3 seconds)

2. TV power comes on and the unit goes into service mode. 4 digit for fault code and communication for I$_2$C bus code will be displayed.

Fig. 1-2


Code Digit Position
Fault Code for VCR
2152
• Cassette Down SW. and S-Tab SW. Data
• Take Up Photo and Supply Photo Sensor Data
• Present mechanism position code
• Lock code
(See Fig. 1-4)
SERVICE MODE
2152
Fault Code for VCR
111111
Communication for I²C bus Code (IC6004, IC5301, IC3001, IC4201, IC4601, IC5101)
TV Screen

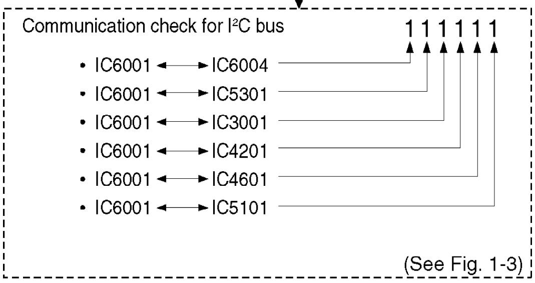

Communication check for I²C bus
111111
• IC6001 ↔ IC6004
• IC6001 ↔ IC5301
• IC6001 ↔ IC3001
• IC6001 ↔ IC4201
• IC6001 ↔ IC4601
• IC6001 ↔ IC5101
(See Fig. 1-3)

Fig. 1-3

(Communication check for I^2C bus)

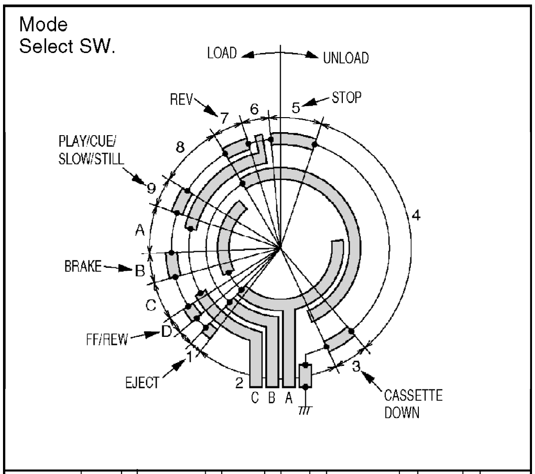
Explanation of Codes	Code No.					
Communication check for I^2C bus (IC6001◄►IC6004) ----- **NG** **OK**	0 1					
Communication check for I^2C bus (IC6001◄►IC5301) ----- **NG** **OK**		0 1				
Communication check for I^2C bus (IC6001◄►IC3001) ----- **NG** **OK**			0 1			
Communication check for I^2C bus (IC6001◄►IC4201) ----- **NG** **OK**				0 1		
Communication check for I^2C bus (IC6001◄►IC4601) ----- **NG** **OK**					0 1	
Communication check for I^2C bus (IC6001◄►IC5101) ----- **NG** **OK**						0 1

Fig. 1-4

(Fault Code for VCR)

Explanation of Codes	Code No.			
S-Tab SW. Data				
• S-Tab SW. is off.	1			
• S-Tab SW. is on.	2			
Take Up and Supply Photo Sensor Data				
• No light detected at either sensor.		1		
• Take Up Photo Sensor detected at beginning of tape.		2		
• Supply Photo Sensor detected at end of tape.		3		
• Light detected at both sensors.		4		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-5.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note)				
• VCR is not in shut-off condition.				0
• Reel lock.				1
• Cylinder lock.				2
• Exceeds loading/unloading time. (Mechanism Lock)				3
• Exceeds Cassette loading/unloading time. (Cassette Lock)				
Tape Unloading (direction)			1	4
Tape Loading (direction)			2	4

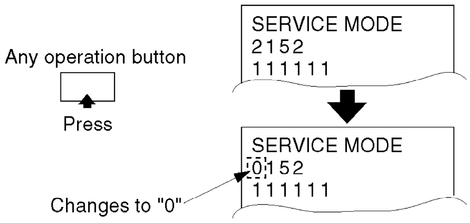
Fig. 1-5


Mode
Select SW.
LOAD
UNLOAD
REV
STOP
7
6
5
PLAY/CUE/
SLOW/STILL
8
9
4
A
BRAKE
B
C
FF/REW
D
EJECT
1
2
C B A
3
CASSETTE
DOWN

Mechanism position	EJECT		CASSETTE DOWN		STOP		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

3. **Press any operation button except for POWER or PLAY (DVD) on either the unit, or the remote to detect that a key has been pressed. The 1st digit changes to "0" only when key is detected.**

Fig. 1-6


Any operation button
Press
SERVICE MODE
2152
111111
SERVICE MODE
0152
111111
Changes to "0"

Note:

When 1 to 4 listed in Lock code occurs, the VCR stops and all VCR function buttons except for power become non-operational.

5.1.2. SELF-DIAGNOSTIC TEST FUNCTION FOR DVD

This unit has a Self-Diagnostic function which detects a problem or malfunction within the unit and displays its corresponding Error code on TV Screen.

Note:

If, after approx. 30 seconds, a unit set to DVD mode automatically switches to VCR mode, there is likely a problem with the DVD Decoder C.B.A. (IC8000, IC8100, IC8200, etc.)

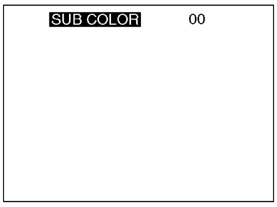
5.1.2.1. How to enter DVD Self-Diagnostic mode

1. **Insert a DVD disc into the DVD Unit.**
2. **Set the unit to DVD mode. Then, press STOP button to stop playback.**
   Note:

Do not let a DVD play during DVD Self-Diagnostic mode.

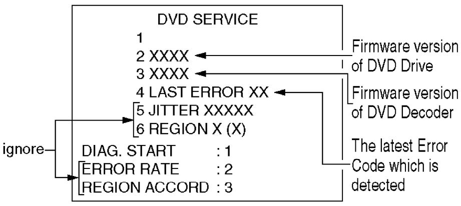
3. **Press and hold STOP/EJECT, PLAY/REPEAT, and VOL- buttons of VCR operation panel of the unit together for over 5 seconds with no cassette inserted. The adjustment overlay will appear on the TV screen.**

Fig. 2-1


SUB COLOR
00

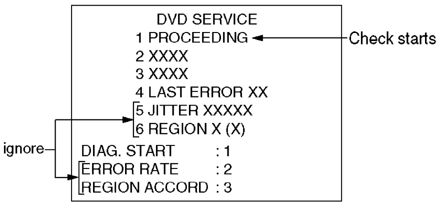
4. **Press DISPLAY key on the remote control to enter DVD Self-Diagnostic mode.**

Fig. 2-2


DVD SERVICE
1
2 XXXX
3 XXXX
4 LAST ERROR XX
5 JITTER XXXXX
6 REGION X (X)
DIAG. START : 1
ERROR RATE : 2
REGION ACCORD : 3
ignore
Firmware version of DVD Drive
Firmware version of DVD Decoder
The latest Error Code which is detected

5. **Press ”1” key on the remote control. The DVD Self-Diagnostic Test function will start automatically.**

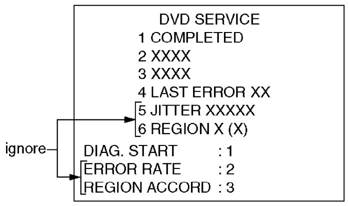
Fig. 2-3


DVD SERVICE
1 PROCEEDING
2 XXXX
3 XXXX
4 LAST ERROR XX
5 JITTER XXXXX
6 REGION X (X)
DIAG. START : 1
ERROR RATE : 2
REGION ACCORD : 3
ignore
Check starts

6. **After a few minutes (approx. 1~5 minutes), the check results will appear on TV screen.**

   - **If no error is detected, "COMPLETED" will appear as shown in Fig. 2-4. Be sure to press Power OFF to end. Then, press Power ON again and remove a DVD from the DVD Unit.**

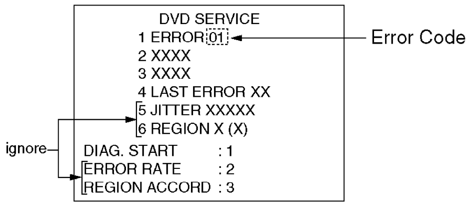
Fig. 2-4



```
DVD SERVICE
1 COMPLETED
2 XXXX
3 XXXX
4 LAST ERROR XX
5 JITTER XXXXX
6 REGION X (X)
DIAG. START      : 1
ERROR RATE       : 2
REGION ACCORD : 3
```

- If some error is detected, 2 digit for Error Code will appear as shown in Fig. 2-5.

Fig. 2-5



```
DVD SERVICE
1 ERROR 01
2 XXXX
3 XXXX
4 LAST ERROR XX
5 JITTER XXXXX
6 REGION X (X)
DIAG. START      : 1
ERROR RATE       : 2
REGION ACCORD : 3
```

Fig. 2-6

Error Code

Error Code	Explanation of cause
00	No Error
10	Loading Error
30	Ultra DMA (Direct Memory Access) CRC Error
40	Spindle Motor Error
50	Traverse Motor Error
60	Servo Error
70	Recovery Error

5.1.3. HOW TO UPDATE THE FIRMWARE OF DVD

It is possible to update the firmware version of the DVD Drive and the DVD Decoder using each Firmware Disc for DVD Drive and DVD Decoder.

5.1.3.1. How to update the firmware of DVD

1. **Confirm the firmware version of DVD Drive. Refer to "SELF-DIAGNOSTIC TEST FUNCTION FOR DVD."**
2. **Set the unit to DVD mode.**
3. **Press OPEN/CLOSE button to open the tray. Then, place the Firmware Disc for DVD Drive in the tray.**
4. **Close the tray. Updating will begin automatically.**
5. **After approx. 1 minute, the tray will open automatically.**

   Note:

   If the tray has still not opened after 3 minutes or Error Indication appears, updating was unsuccessful. In this case, repeat above steps from step 1.
6. **Remove the Firmware Disc from the tray. Then, disconnect the AC Plug. (The tray will not close.)**

7. Connect the AC Plug and turn on the power. Then, reset all VCR memory. Refer to "HOW TO RESET ALL COMBINATION DVD VCR MEMORY FUNCTIONS."

5.1.3.2. How to update the firmware of DVD Decoder:

1. Confirm the firmware version of DVD Decoder. Refer to "SELF-DIAGNOSTIC TEST FUNCTION FOR DVD."
2. Set the unit to DVD mode.
3. Press OPEN/CLOSE button to open the tray. Then, place the Firmware Disc for DVD Decoder in the tray.
4. Close the tray. Updating will begin automatically.
5. After approx. 1 minute, the tray will open automatically.
   Note:
   If the tray has still not opened after 3 minutes or Error Indication appears, updating was unsuccessful. In this case, repeat above steps from step 1.
6. Remove the Firmware Disc from the tray. Then, disconnect the AC Plug. (The tray will not close.)
7. Connect the AC Plug and turn on the power. Then, reset all VCR memory. Refer to "HOW TO RESET ALL COMBINATION DVD VCR MEMORY FUNCTIONS."

CAUTION:

1. Do not unplug the AC Cord during updating.
2. Do not press any buttons during updating.

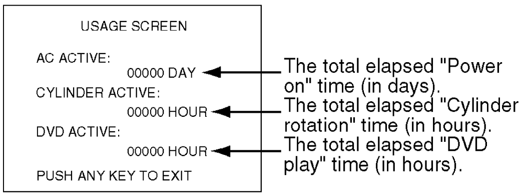
5.1.4. USAGE SCREEN MODE

Function displayed on the TV monitor:

- the total elapsed "Power on" time (in days)
- the total elapsed "Cylinder rotation" time (in hours)
- the total elapsed "DVD play" time (in hours).

1. With power turned and no cassette, press STOP/EJECT button on VCR and 7 key on remote together.
   The USAGE SCREEN will be displayed on the TV Monitor.

Fig. 3



USAGE SCREEN

AC ACTIVE:
00000 DAY
CYLINDER ACTIVE:
00000 HOUR
DVD ACTIVE:
00000 HOUR
PUSH ANY KEY TO EXIT

The total elapsed "Power on" time (in days).

The total elapsed "Cylinder rotation" time (in hours).

The total elapsed "DVD play" time (in hours).

<TV monitor>

Note:

1. After replacing the Cylinder Unit, press COUNTER RESET button on remote in this mode. Only Total elapsed "Cylinder rotation" time (in days) will be cleared to 0.
2. After replacing the DVD Unit, press ADD/DLT button on remote in this mode. Only Total elapsed time "DVD Play" time (in hours) will be cleared to 0.
3. To release from Usage Screen Mode, press any operation button on VCR or insert a cassette tape in this mode. VCR will return to normal operation mode.

5.1.5. GROUNDING FOR ELECTROSTATIC BREAKDOWN

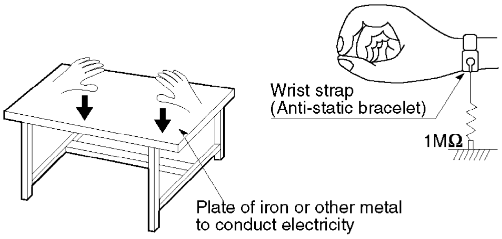
Prevention

1. Human body grounding
   Use the antistatic wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.

Fig. 4



5.1.6. DVD DECODER C.B.A. REPLACEMENT NOTE

After replacing DVD Decoder C.B.A. or EEPROM IC (IC8001), confirm the Firmware version of

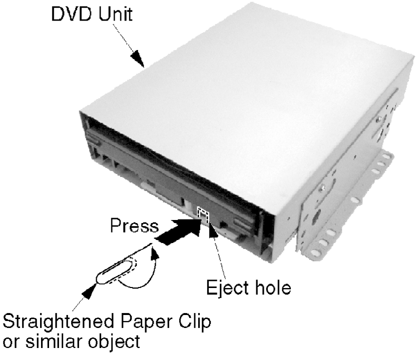
DVD using Self-Diagnostic function. If the version is different than that indicated on the Firmware Disc, update it using the Firmware Disc. Refer to "HOW TO UPDATE THE FIRMWARE OF DVD."

5.1.7. METHOD FOR EJECTING THE DVD TRAY MANUALLY

1. Insert a Straightened Paper Clip or similar object into the Eject hole.

2. Press it gently, and then pull the Tray fully out.

Fig. 6



5.1.8. SERVICE POSITION

5.1.8.1. Service Position

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment Power Supply C.B.A. check
Service Position (2)	Main C.B.A. check TV Main C.B.A. check
Service Position (3)	DVD Decoder C.B.A. check

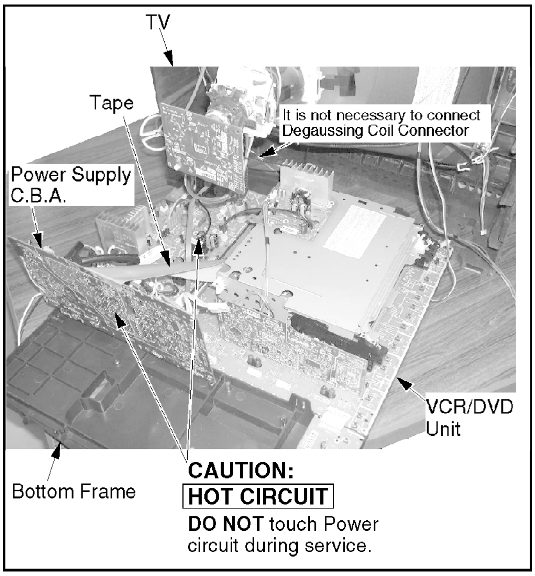
CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Power Supply C.B.A. and the TV Main C.B.A.

Use extreme care to prevent accidental shock when servicing.

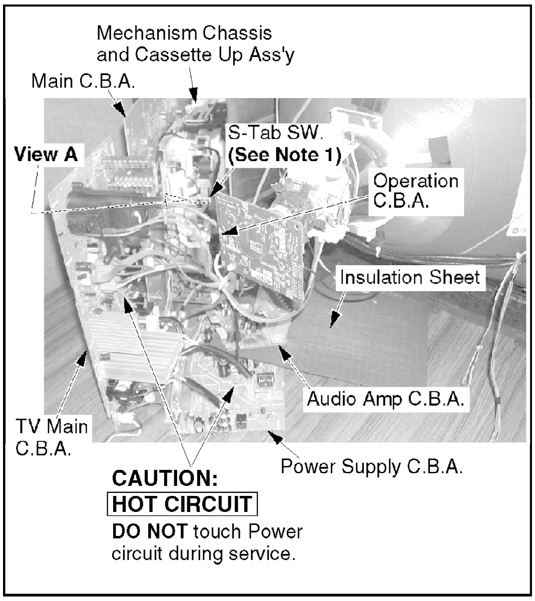
5.1.8.1.1. Service Position (1)

Fig. 6-1


TV
Tape
It is not necessary to connect Degaussing Coil Connector
Power Supply C.B.A.
VCR/DVD Unit
Bottom Frame
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

5.1.8.1.2. Service Position (2)

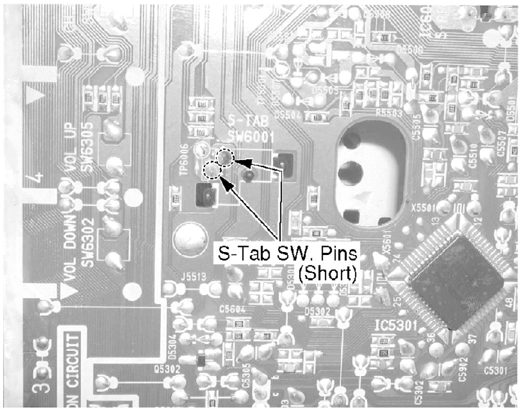
Fig. 6-2-1


Mechanism Chassis and Cassette Up Ass'y
Main C.B.A.
View A
S-Tab SW. (See Note 1)
Operation C.B.A.
Insulation Sheet
Audio Amp C.B.A.
TV Main C.B.A.
Power Supply C.B.A.
CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.

Note:

1. **It is possible that the S-Tab SW. may not work correctly in Service Positions(2). (Recording can not be done). In this case, short the S-Tab SW. Pins on the foil side of Main C.B.A. to turn this SW. on.**

Fig. 6-2-2


S-TAB
SW6001
S-Tab SW. Pins
(Short)
VOL UP
SW6305
VOL DOWN
SW6302
IC5301
X5501
J5513
Q5302
ON CIRCUIT
View A
Main C.B.A. (foil side)

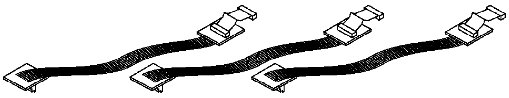
Alternative method:
Cover the S-Tab SW. with masking tape.

5.1.8.1.3. Service Position (3)

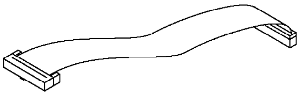
In Service Position (3), the DVD Decoder C.B.A. with Extension Cable (LSUA0034) X3 and Connector Cable (IDE Cable) (Not supplied) can be peformed.

Fig. 6-3-1

Extension Cable (LSUA0034) 3pcs



Connector Cable (IDE Cable) **Not supplied (Purchase locally)**



1. **Remove the DVD Unit and the DVD Decoder C.B.A.**

   Note:

   Remove the original Connector Cable (IDE) from the DVD Unit. (The original Connector Cable (IDE) is not used in this position.)

2. **Conect the Connector Cable (Power) and the Connector Cable (IDE Cable) to the DVD Unit from the DVD Decoder C.B.A.**

3. **Connect the 3 Extension Cables as follows:**

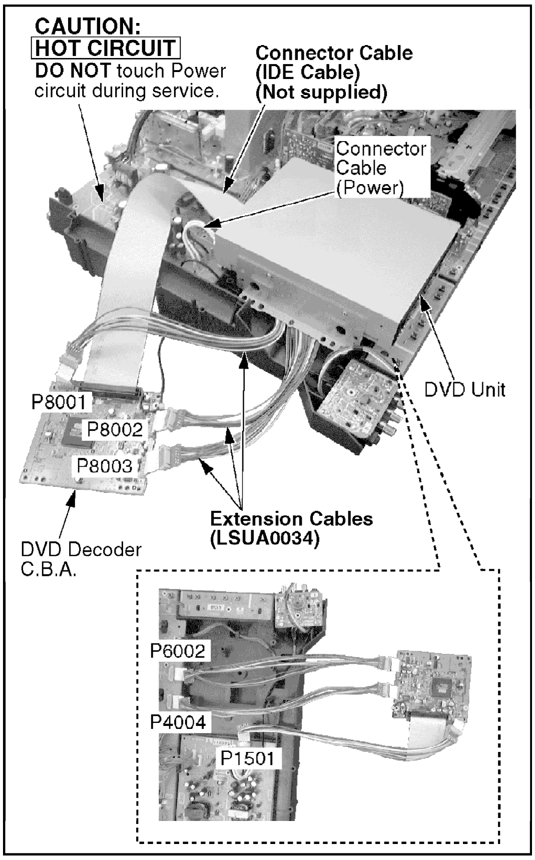
   - **With Extension Cable (LSUA0034): P8001 on the DVD Decoder C.B.A. to P1501 on the Power Supply C.B.A.**

   - **With Extension Cable (LSUA0034): P8002 on the DVD Decoder C.B.A. to P4004 on the Main C.B.A.**

   - **With Extension Cable (LSUA0034): P8003 on the DVD Decoder C.B.A. to P6002 on the Main C.B.A.**

4. Place the DVD Unit and DVD Decoder C.B.A. as shown.

Fig. 6-3-2


CAUTION:
HOT CIRCUIT
DO NOT touch Power circuit during service.
Connector Cable (IDE Cable) (Not supplied)
Connector Cable (Power)
DVD Unit
P8001
P8002
P8003
DVD Decoder C.B.A.
Extension Cables (LSUA0034)
P6002
P4004
P1501

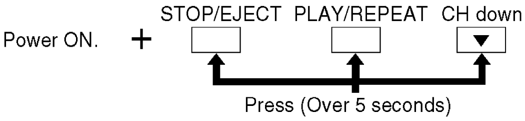
5.1.9. HOT CIRCUIT

Primary circuit exists on the Power Supply C.B.A. and the TV Main C.B.A.
This circuit is identified as " HOT " on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

5.1.10. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press and hold STOP/EJECT, PLAY/REPEAT, and CH down buttons of VCR operation panel on the unit together over 5 secondsin power on condition.

Fig. 7


Power ON.
+
STOP/EJECT
PLAY/REPEAT
CH down
▼
Press (Over 5 seconds)

The unit goes into service mode.
In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.
To release from this mode, press POWER button off or disconnect AC Plug.

5.1.11. CAUTION FOR INSTALLATION OF VCR/DVD ASS'Y

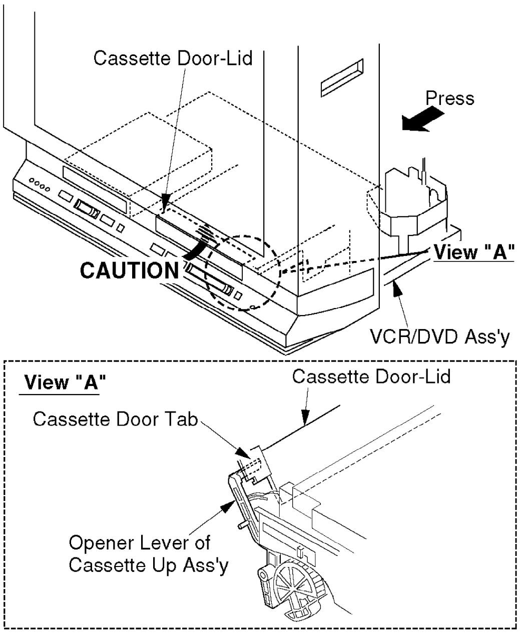
CAUTION:

Opener Lever may be damaged when VCR/DVD Ass’y is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass’y set incorrectly.

Install the VCR/DVD Ass’y as follows:

1. **Swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.**
2. **Make sure that all guide tabs are aligned properly. Then, press the VCR/DVD Ass’y straight in.**

Fig. 8


Cassette Door-Lid
Press
View "A"
CAUTION
VCR/DVD Ass'y
View "A"
Cassette Door-Lid
Cassette Door Tab
Opener Lever of
Cassette Up Ass'y

5.1.12. METHOD FOR LOADING/UNLOADING OF MECHANISM

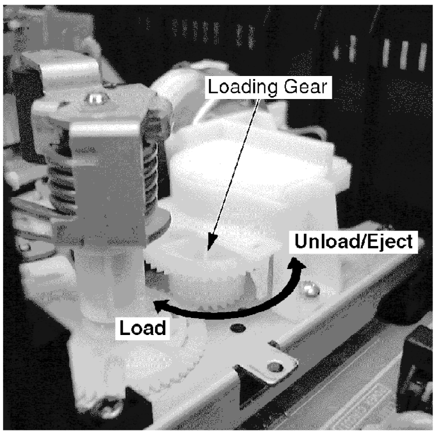
5.1.12.1. (Manual Method)

Turn the Loading Gear clockwise (for loading) or counterclockwise (for unloading) using needlenose pliers etc.

Note:

Do not use this method if Mechanism is jammed or locked.

Fig. 9-1


Loading Gear
Unload/Eject
Load

5.1.12.2. (Electrical Method)

Apply +10.0 V DC Power Supply to the Loading Motor terminals.

Loading

DC + to Portion "a," DC - to Portion "b"

Unloading

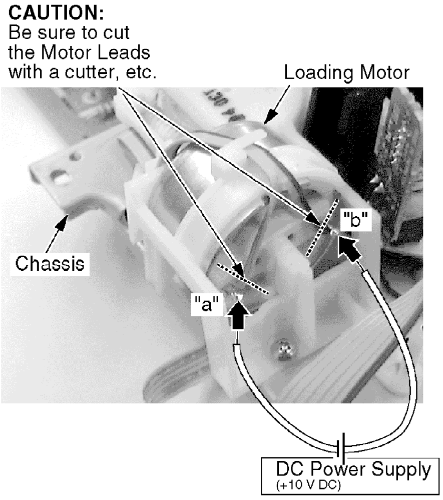
DC - to Portion "a," DC + to Portion "b"

CAUTION:

Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.

Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.

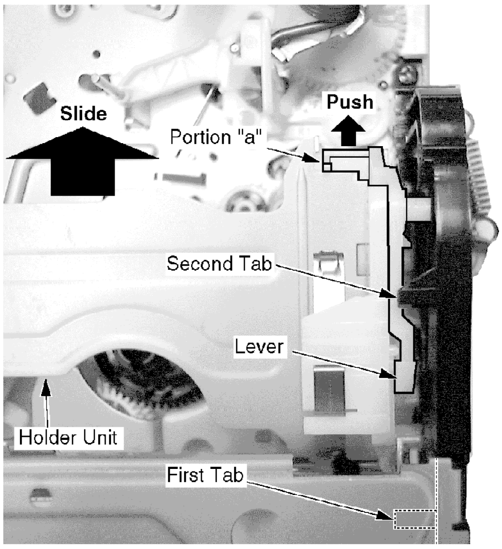
Fig. 9-2


CAUTION:
Be sure to cut the Motor Leads with a cutter, etc.
Loading Motor
Chassis
"a"
"b"
DC Power Supply
(+10 V DC)

5.1.12.2.1. WHEN LOADING WITHOUT A CASSETTE

When loading without a cassette, push Portion "a" on the Holder Unit of Cassette Up Ass’y so that the Lever clear the First Tab and Second Tab.

Fig. 9-3


Slide
Push
Portion "a"
Second Tab
Lever
Holder Unit
First Tab

5.1.13. HOW TO REMOVE A JAMMED TAPE

CAUTION:

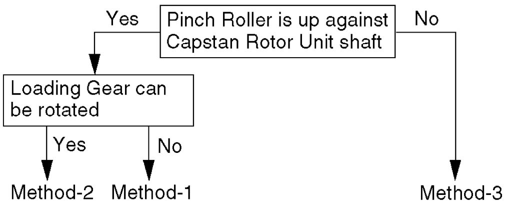
Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.

Remove a jammed tape as follows:

5.1.13.1. Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

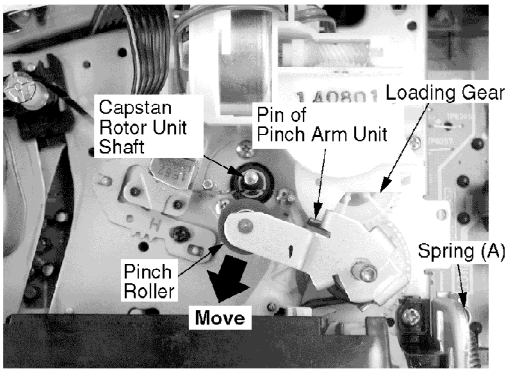
Fig. 10-1


Yes
Pinch Roller is up against Capstan Rotor Unit shaft
No
Loading Gear can be rotated
Yes
No
Method-2
Method-1
Method-3

Method -1:

1. **Move the Pinch Roller Unit out by unhooking the Pin of Pinch Arm Unit so that the Pinch Roller is separated from the Capstan Rotor Unit shaft.**

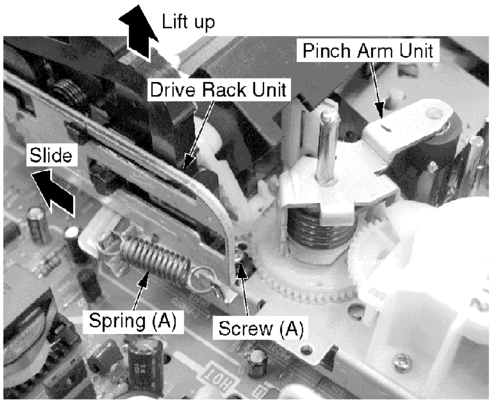
Fig.10-2


Capstan Rotor Unit Shaft
Pin of Pinch Arm Unit
Loading Gear
Spring (A)
Pinch Roller
Move

Top View

2. Remove the tape from the tape path.
3. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
4. Unhook Spring (A) of the Drive Rack Arm.
5. Remove Screw (A).
6. Lift the Cassette Up Ass'y. While pulling the Cassette Up Ass'y out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
7. Check the cause of mechanical trouble and repair.

Fig. 10-3


Lift up
Pinch Arm Unit
Drive Rack Unit
Slide
Spring (A)
Screw (A)

Method -2:

1. Rotate Loading Motor counterclockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 2 through Step 7 of Method -1.

Method -3:

1. **Perform Step 2 through Step 7 of Method -1.**

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "EJECT Position Confirmation"in Disassembly/Assembly Procedures.)

5.1.13.2. Electrical Method

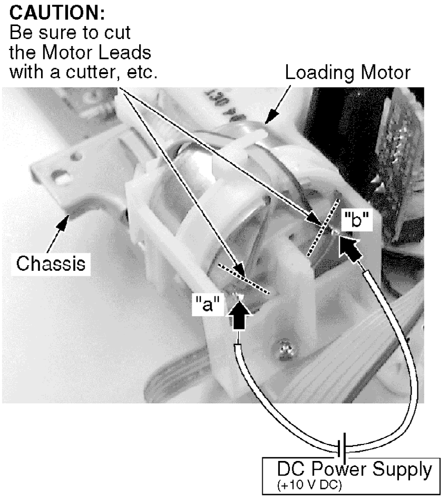
Electrical method can only be performed when the mechanism is moved by rotating the Loading Gear.

CAUTION:

- **Before applying DC Power Supply, be sure to cut the Motor Leads with a cutter, etc.**
  Otherwise, the Loading Motor Drive IC (IC2501) may be damaged.
- **If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply.**
  Instead, perform "Manual Method."

1. **Be sure to cut the Motor Leads with a cutter, etc.**
2. **Apply +10.0 V DC Power Supply to the Loading Motor terminals.**
3. **When the Loading Posts reach the fully unloaded position, remove the Power Supply.**

Fig. 11



CAUTION:
Be sure to cut
the Motor Leads
with a cutter, etc.

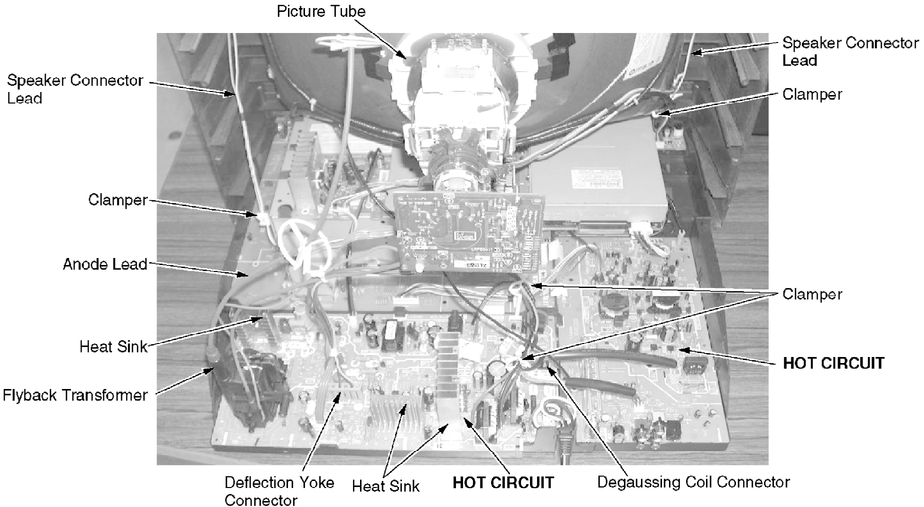
4. **Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.**
5. **Eject the cassette by applying +10.0 V DC Power Supply again.**

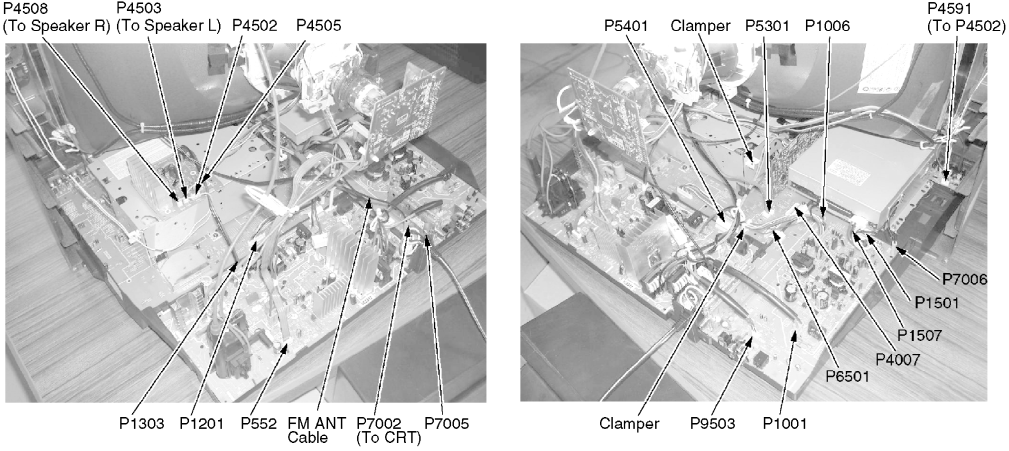
5.1.14. WIRE AND LEAD POSITION DIAGRAM

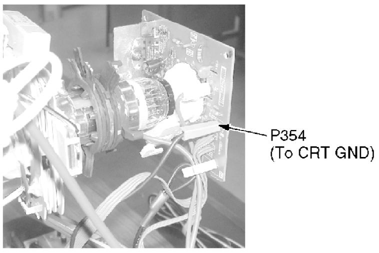
Fig.12

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:
No lead wires or flat cables should touch any heating parts or the Heat Sink Plate.
Use extreme care especially for followings.


Picture Tube
Speaker Connector Lead
Speaker Connector Lead
Clamper
Clamper
Anode Lead
Clamper
Heat Sink
HOT CIRCUIT
Flyback Transformer
Deflection Yoke Connector
Heat Sink
HOT CIRCUIT
Degaussing Coil Connector


P4508 (To Speaker R)
P4503 (To Speaker L)
P4502
P4505
P5401
Clamper
P5301
P1006
P4591 (To P4502)
P7006
P1501
P1507
P4007
P6501
P1303
P1201
P552
FM ANT Cable
P7002 (To CRT)
P7005
Clamper
P9503
P1001


P354 (To CRT GND)

5.1.15. DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

5.1.16. HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

5.1.17. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

5.1.18. HOW TO RESET ALL COMBINATION DVD VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY/REPEAT and FF buttons of VCR operation panel on the unit together formore than 5 seconds.
Power will shut off.

5.1.19. HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. Connect an RF cable from the output of one unit to the input of the test unit.
2. Select corresponding RF channels.
3. Playback a recording of P.B.S. channel including clock set data and confirm this feature.

5.1.20. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of Combination DVD VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resultingin personal injury from electrical shocks. It will also protect Combination DVD VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

5.1.21. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

6. DISASSEMBLY/ASSEMBLY PROCEDURES

6.1. CABINET SECTION

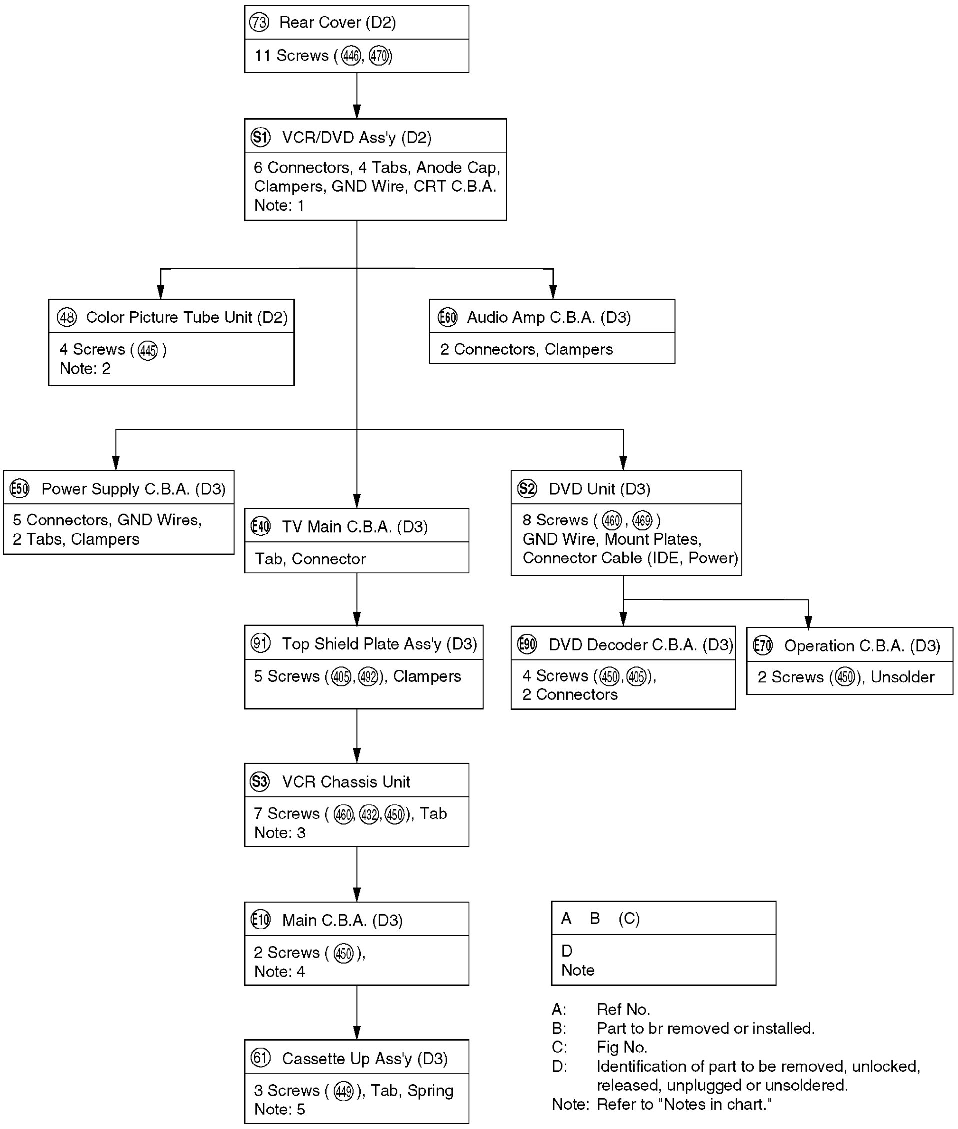
6.1.1. Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

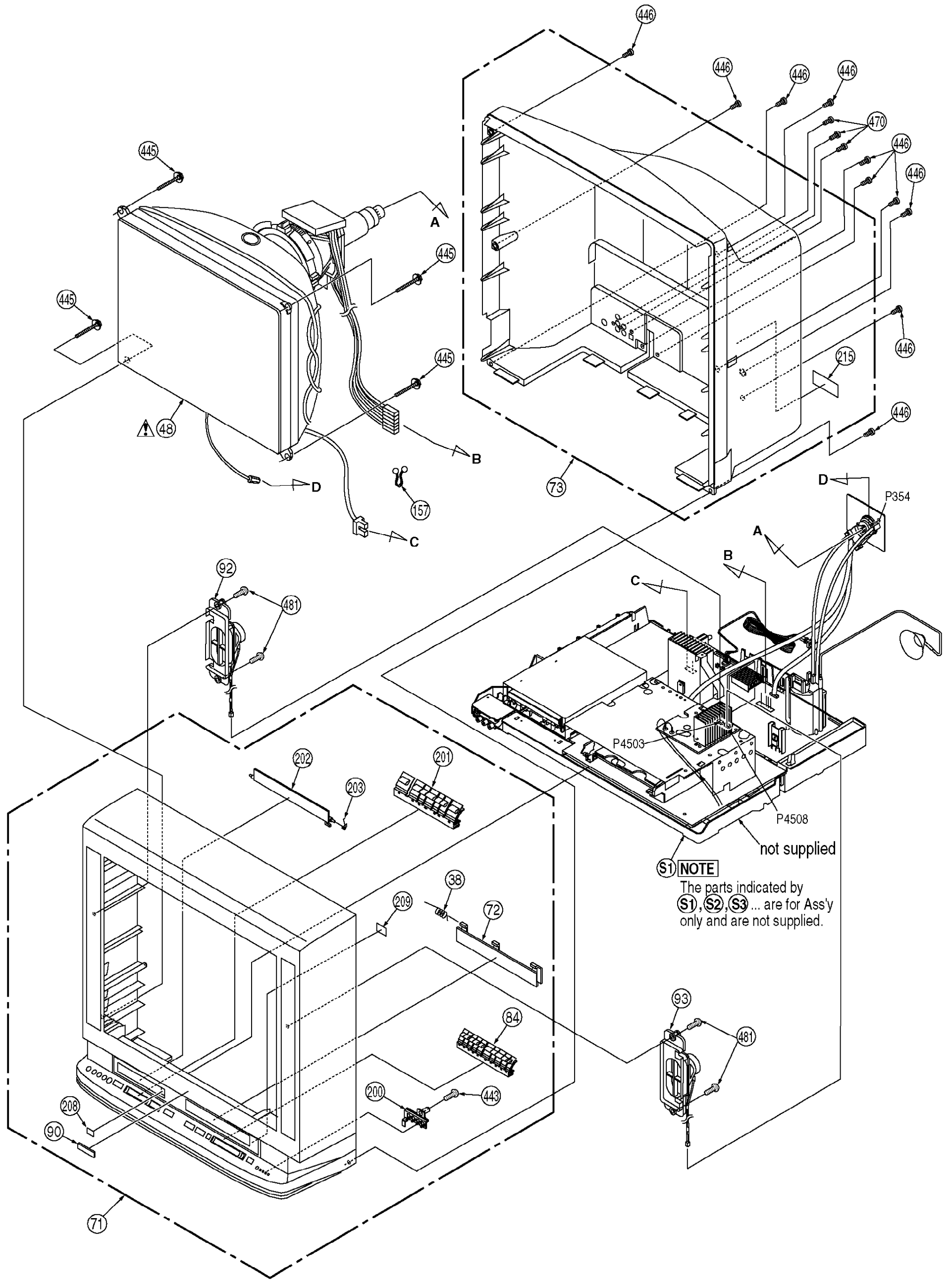
Disconnect AC plug before disassembly.

Fig. D1


(73) Rear Cover (D2)
11 Screws ((446), (470))
(S1) VCR/DVD Ass'y (D2)
6 Connectors, 4 Tabs, Anode Cap, Clampers, GND Wire, CRT C.B.A.
Note: 1
㊽ Color Picture Tube Unit (D2)
4 Screws ((445))
Note: 2
(E60) Audio Amp C.B.A. (D3)
2 Connectors, Clampers
(E50) Power Supply C.B.A. (D3)
5 Connectors, GND Wires, 2 Tabs, Clampers
(E40) TV Main C.B.A. (D3)
Tab, Connector
(S2) DVD Unit (D3)
8 Screws ((460), (469))
GND Wire, Mount Plates, Connector Cable (IDE, Power)
(91) Top Shield Plate Ass'y (D3)
5 Screws ((405),(492)), Clampers
(E90) DVD Decoder C.B.A. (D3)
4 Screws ((450),(405)), 2 Connectors
(E70) Operation C.B.A. (D3)
2 Screws ((450)), Unsolder
(S3) VCR Chassis Unit
7 Screws ((460),(432),(450)), Tab
Note: 3
(E10) Main C.B.A. (D3)
2 Screws ((450)),
Note: 4
(61) Cassette Up Ass'y (D3)
3 Screws ((449)), Tab, Spring
Note: 5
A B (C)
D
Note

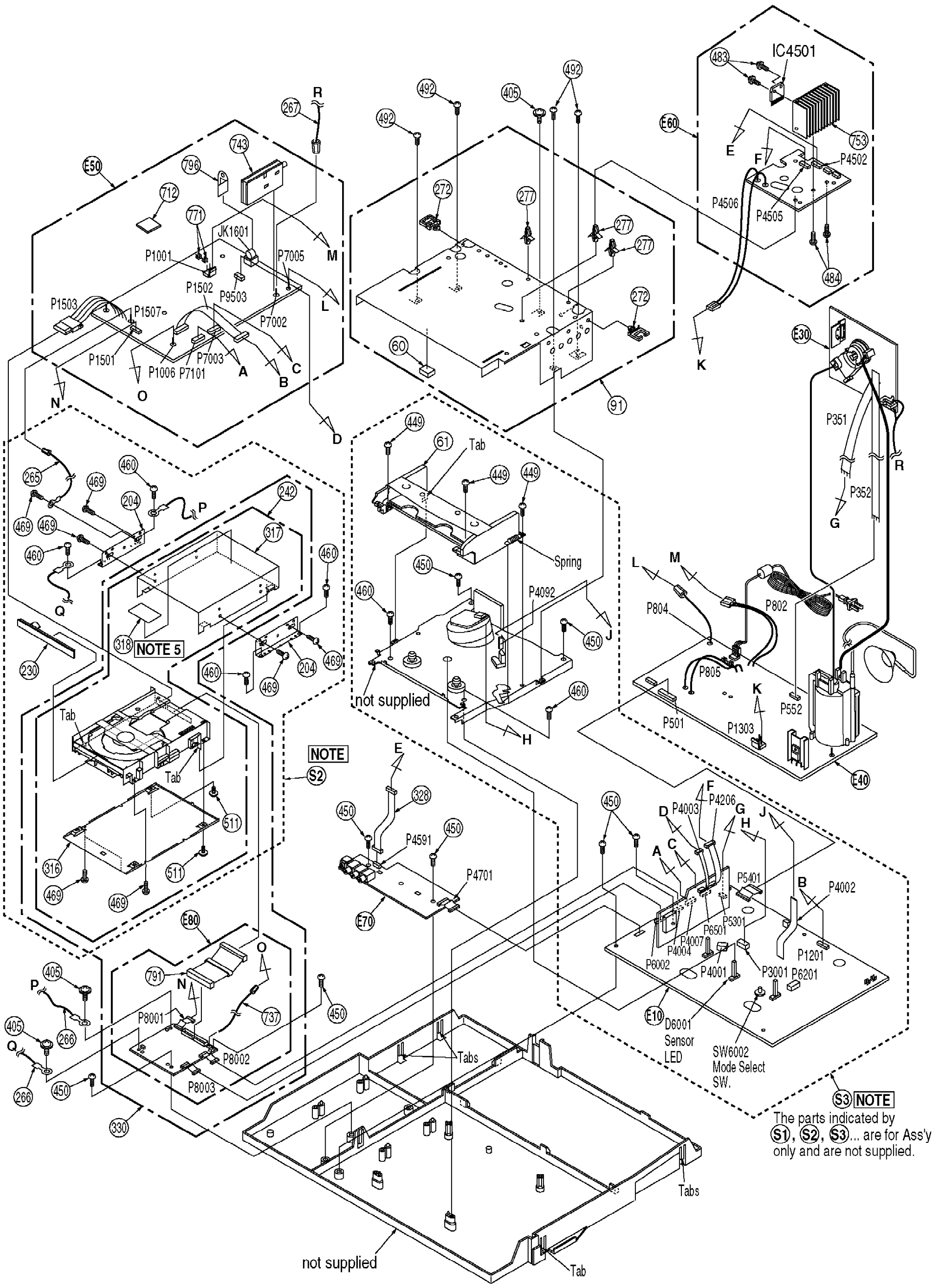
A: Ref No.
B: Part to br removed or installed.
C: Fig No.
D: Identification of part to be removed, unlocked, released, unplugged or unsoldered.
Note: Refer to "Notes in chart."

Fig. D2


446
446
446
446
470
446
446
446
446
215
445
445
445
445
A
B
C
D
48
157
73
D
P354
A
B
C
92
481
P4503
P4508
not supplied
S1
202
203
201
38
209
72
84
93
481
200
443
208
90
71

NOTE
The parts indicated by S1, S2, S3 ... are for Ass'y only and are not supplied.

Fig. D3

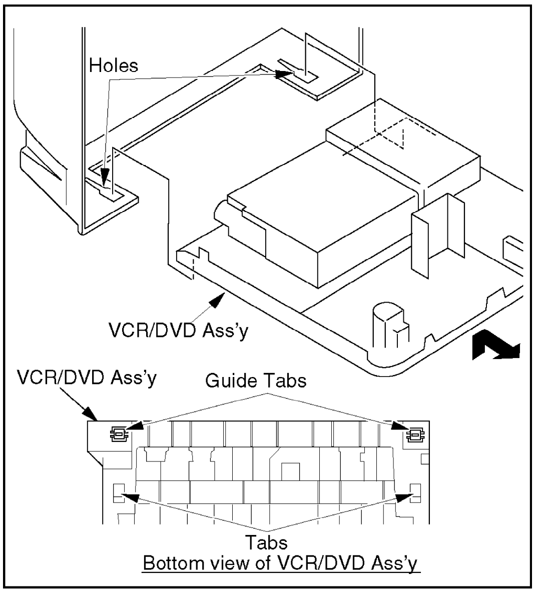

IC4501
483
753
P4502
E60
E
F
P4506
P4505
484
R
267
743
796
E50
712
771
JK1601
P1001
P7005
M
P1502
P9503
L
P1503
P1507
P7002
P1501
P7003
C
P1006 P7101
A
B
O
N
D
492
405
492
492
272
277
277
277
272
60
91
K
E30
P351
R
P352
G
265
469
460
204
P
469
469
460
Q
242
317
460
318
NOTE 5
204
469
460
469
230
449
61
Tab
449
449
Spring
450
460
P4092
450
J
not supplied
460
H
L
M
P804
P802
P805
K
P501
P1303
P552
E40
Tab
Tab
511
316
511
469
469
NOTE
S2
E
328
450
P4591
450
P4701
E70
450
F
P4206
D
P4003
G
C
H
J
A
P5401
B
P4002
P6501
P5301
P4007
P4004
P6002
P4001
P3001
P6201
P1201
E10
D6001
Sensor
LED
SW6002
Mode Select
SW.
E80
791
N
O
737
P8001
P8002
P8003
450
405
P
266
405
Q
266
450
330
Tabs
Tabs
Tab
not supplied
S3 NOTE
The parts indicated by
S1, S2, S3... are for Ass'y
only and are not supplied.

NOTE 5: When replacing the DVD Frame (Ref. No. 317), be sure to place the Rating Label (Ref. No. 318) on it.

6.1.1.1. Notes in chart

1. Removal of VCR/DVD Ass'y

Fig. D4


Holes
VCR/DVD Ass'y
VCR/DVD Ass'y
Guide Tabs
Tabs
Bottom view of VCR/DVD Ass'y

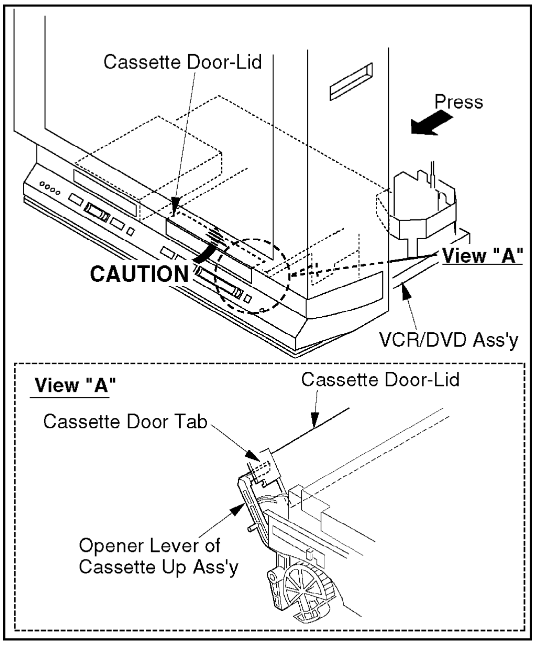
Installation of VCR/DVD Ass'y

CAUTION:

Opener Lever may be damaged when VCR/DVD Ass'y is installed, with Cassette Door-Lid and Opener Lever of Cassette Up Ass'y set incorrectly.

1. **When installing the VCR/DVD Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.**
2. **Make sure that all guide tabs are aligned properly.
Then, press the VCR/DVD Ass'y straight in.**

Fig. D5


Cassette Door-Lid
Press
CAUTION
View "A"
VCR/DVD Ass'y
View "A"
Cassette Door-Lid
Cassette Door Tab
Opener Lever of Cassette Up Ass'y

2. Removal of Color Picture Tube Unit

Place the Unit face down on a soft cloth before removing the Color Picture Tube Unit.

3. Installation of VCR Chassis Unit

When installing 2 Screws (460), slide the Holder Unit of the Cassette Up Ass'y (Refer to "WHEN LOADING WITHOUT A CASSETTE" in SERVICE NOTES) to tighten screws. Then, slide it back to the EJECT Position.

Make sure that Mechanism and Cassette Up Ass'y are in the EJECT Position. (Refer to "EJECT Position Confirmation" in Disassembly/Assembly Procedures.)

4. Removal of Main C. B. A.

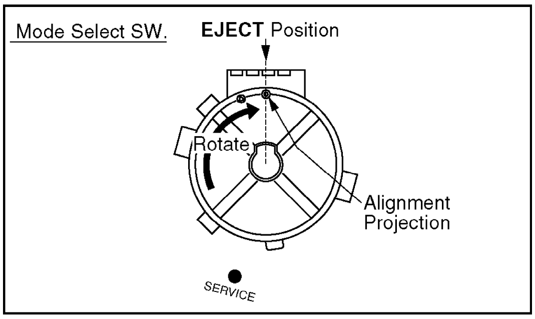
Work carefully so as not to break Sensor LED when lifting the Mechanism Chassis and Cassette Up Ass'y.

Installation of Mechanism Chassis and Cassette Up Ass’y onto Main C.B.A.

A. Make sure the Mode Select SW. on the Main C.B.A. is in EJECT position. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

B. Make sure the Mechanism and Cassette Up Ass’y are in the EJECT Position. (Refer to "EJECT Position Confirmation" in DISASSEMBLY/ASSEMBLY PROCEDURES.)

Fig. D6



C. Install the Mechanism Chassis and Cassette Up Ass’y straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 3 Connectors (P6201, P3001 and P4001) are aligned and seated securely.

5. Installation of Cassette Up Ass'y
   - A. Confirm that the Locking Tab under the Cassette Up Ass'y is in Hole on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.
   - B. When installing 2 Screws (449), slide the Holder Unit (Refer to " WHEN LOADING WITHOUT A CASSETTE" in SERVICE NOTES) to tighten screws. Then, slide it back to the EJECT Position.
   - C. Hook Spring to the Drive Rack Arm on the Mechanism Chassis.

6.2. MECHANISM SECTION

6.2.1. Disassembly/Reassembly Method

This procedure starts with the condition that the cabinet parts and Main C.B.A. have been removed.
When reassembling, perform the step(s) in the reverse order.
Perform all disassembly/reassembly and alignments procedures in EJECT Position.

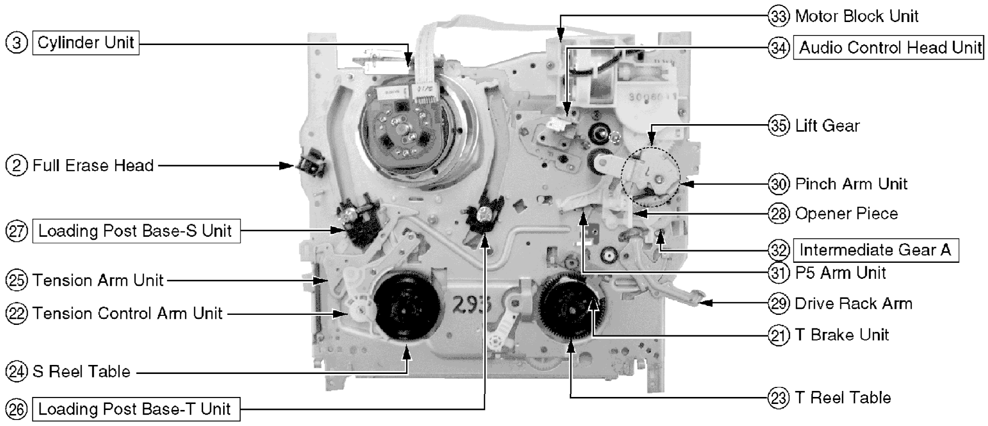
Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	-----------	Not used	-	-	
②	-----------	Full Erase Head	J2	(L-1)	
③	1	Cylinder Unit	J2	2(S-2), 3(S-3), Flexible Cable, Head Amp C.B.A., Unsolder	TAPE INTERCHANGEABILITY Adjustment
④	-----------	Capstan Belt	J3-1	-	
⑤	-----------	Support Angle	J3-1	(S-4), (S-5)	
⑥	5	Intermediate Gear B	J3-1	(L-2)	Gear Alignment
⑦	4,5,6	Main Cam Gear	J3-1	Main Cam Push Nut	Gear Alignment
⑧	4	Center Clutch Unit	J4-1	(W-1)	
⑨	4,8	Changing Gear Spring	J4-1	-	
⑩	4,8,9	Changing Gear	J4-1	-	
⑪	4,8,9,10	Idler Arm Unit	J4-1	-	
⑫	-----------	Reel Gear	J5-1	2(L-3)	
⑬	4,5,6,7,8,9,10	Main Rod	J5-1	(W-2), (L-4)	Gear Alignment
⑭	-----------	Not used	-	-	
⑮	4	Capstan Motor Unit	J6	3(S-6)	
⑯	-----------	Not used	-	-	
⑰	-----------	Not used	-	-	
⑱	-----------	Not used	-	-	
⑲	4,8,9,10,13	T Loading Arm Unit	J7-1	-	Gear Alignment
⑳	4,5,6,7,8,9,10,13,19	S Loading Arm Unit	J7-1	-	Gear Alignment
㉑	-----------	T Brake Unit	J8-1	-	
㉒	-----------	Tension Control Arm Unit	J8-1	3(L-5)	
㉓	21	T Reel Table	J8-1	-	
㉔	22	S Reel Table	J8-1	-	
㉕	22	Tension Arm Unit	J8-1	2(L-6), (P-1), (P-2)	
㉖	22,25	Loading Post Base-T Unit	J9	-	P2 AND P3 POST HEIGHT, TAPE INTERCHANGEABILITY Adjustment
㉗	22,25	Loading Post Base-S Unit	J9	-	
㉘	-----------	Opener Piece	J10-1	2(L-7)	
㉙	4,5,6,7	Drive Rack Arm	J10-1	-	
㉚	28	Pinch Arm Unit	J10-1	-	
㉛	28,30	P5 Arm Unit	J10-1	-	
㉜	5,6,28	Intermediate Gear A	J10-1	-	Gear Alignment
㉝	-----------	Motor Block Unit	J11	2(S-9)	
㉞	-----------	Audio Control Head Unit	J11	(S-10)	TAPE INTERCHANGEABILITY Adjustment
㉟	5,6,28,30,32,33	Lift Gear	J11	-	
㊱	-----------	Not used	-	-	
㊲	22,25	Tension Arm Boss	J11	(L-8)	
㊳	-----------	SS Brake Arm Unit	J5-1	(L-9), (P-3)	

6.2.2. Inner Parts Location

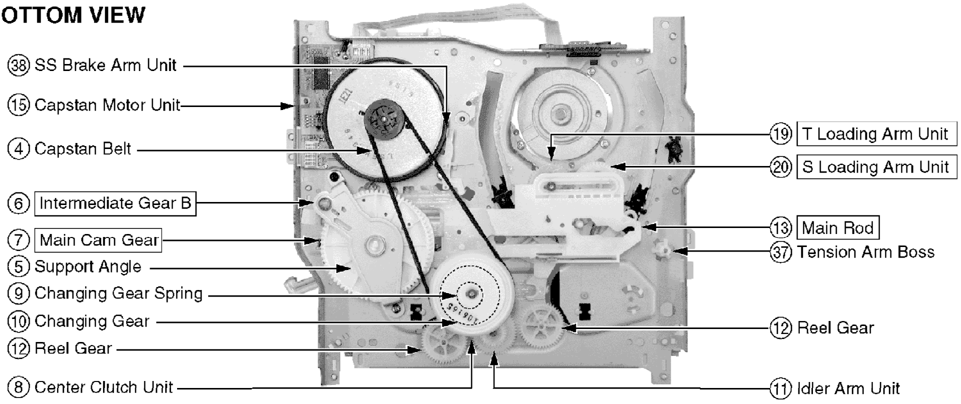
Note: BOX indicates alignment (Gear Alignment or Mechanical Adjustment) required when a part is replaced.

Fig. J1-1

TOP VIEW


③ Cylinder Unit
② Full Erase Head
㉗ Loading Post Base-S Unit
㉕ Tension Arm Unit
㉒ Tension Control Arm Unit
㉔ S Reel Table
㉖ Loading Post Base-T Unit
㉝ Motor Block Unit
㉞ Audio Control Head Unit
㉟ Lift Gear
㉚ Pinch Arm Unit
㉘ Opener Piece
㉜ Intermediate Gear A
㉛ P5 Arm Unit
㉙ Drive Rack Arm
㉑ T Brake Unit
㉓ T Reel Table
293

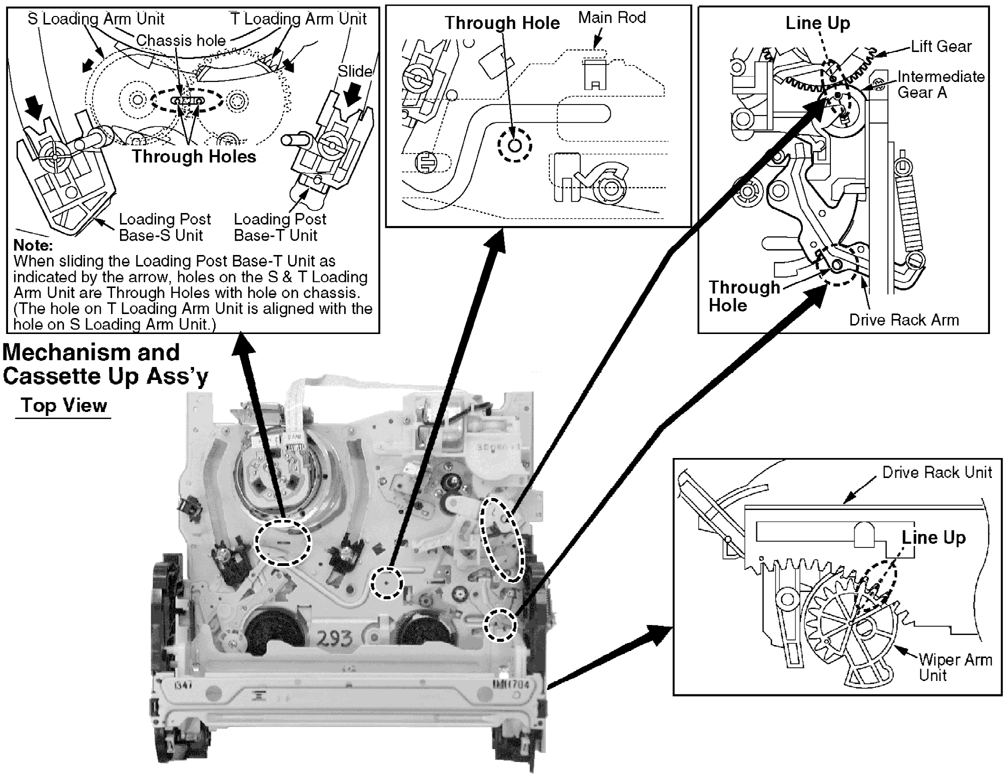
BOTTOM VIEW


㊳ SS Brake Arm Unit
⑮ Capstan Motor Unit
④ Capstan Belt
⑥ Intermediate Gear B
⑦ Main Cam Gear
⑤ Support Angle
⑨ Changing Gear Spring
⑩ Changing Gear
⑫ Reel Gear
⑧ Center Clutch Unit
⑲ T Loading Arm Unit
⑳ S Loading Arm Unit
⑬ Main Rod
㊲ Tension Arm Boss
⑫ Reel Gear
⑪ Idler Arm Unit

6.2.3. EJECT Position Confirmation

Fig. J1-2

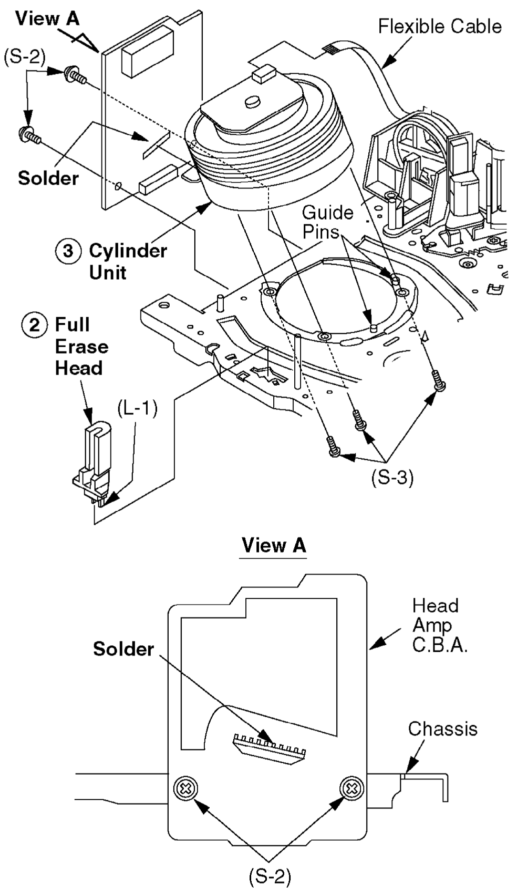
Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.


S Loading Arm Unit
T Loading Arm Unit
Chassis hole
Slide
Through Holes
Loading Post Base-S Unit
Loading Post Base-T Unit
Through Hole
Main Rod
Line Up
Lift Gear
Intermediate Gear A
Through Hole
Drive Rack Arm
Mechanism and Cassette Up Ass'y
Top View
Drive Rack Unit
Line Up
Wiper Arm Unit

Note:
When sliding the Loading Post Base-T Unit as indicated by the arrow, holes on the S & T Loading Arm Unit are Through Holes with hole on chassis. (The hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.)

6.2.4. Full Erase Head and Cylinder Unit

Fig. J2


View A
(S-2)
Solder
Flexible Cable
Guide Pins
③ Cylinder Unit
② Full Erase Head
(L-1)
(S-3)
View A
Head Amp C.B.A.
Solder
Chassis
(S-2)

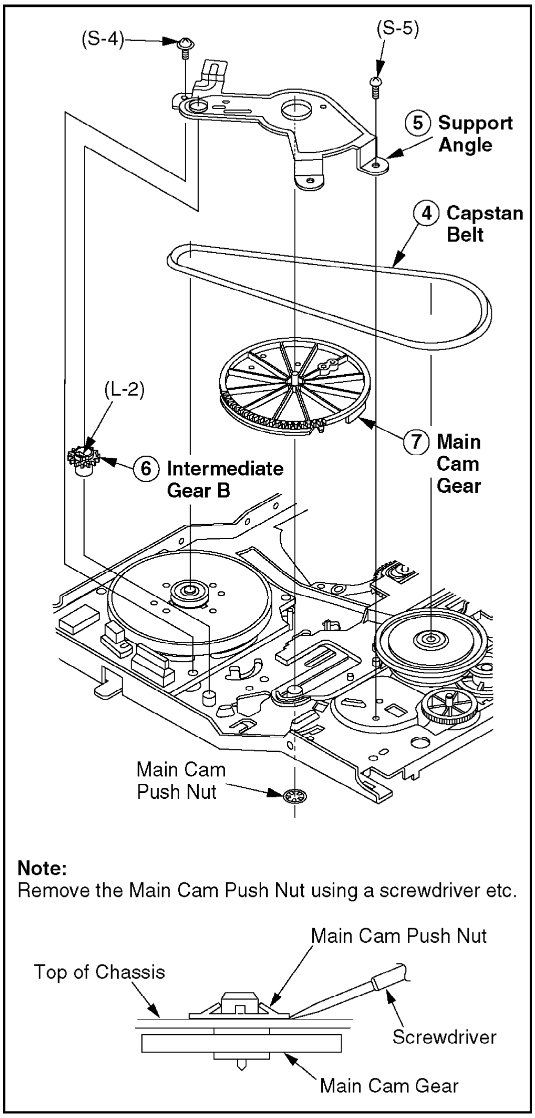
Note:
Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

6.2.4.1. Reassembly Notes

1. **After replacing the Cylinder Unit, clear the Total elapsed "Cylinder rotation" time (in hours) to 0. Refer to "USAGE SCREEN MODE" in SERVICE NOTES.**

6.2.5. Capstan Belt, Support Angle, Intermediate Gear B, and Main Cam Gear

Fig. J3-1

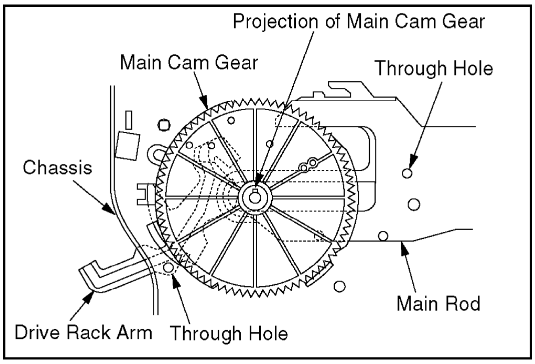

(S-4)
(S-5)
⑤ Support Angle
④ Capstan Belt
(L-2)
⑦ Main Cam Gear
⑥ Intermediate Gear B
Main Cam Push Nut
Main Cam Push Nut
Top of Chassis
Screwdriver
Main Cam Gear

Note:
Remove the Main Cam Push Nut using a screwdriver etc.

6.2.5.1. Reassembly Notes

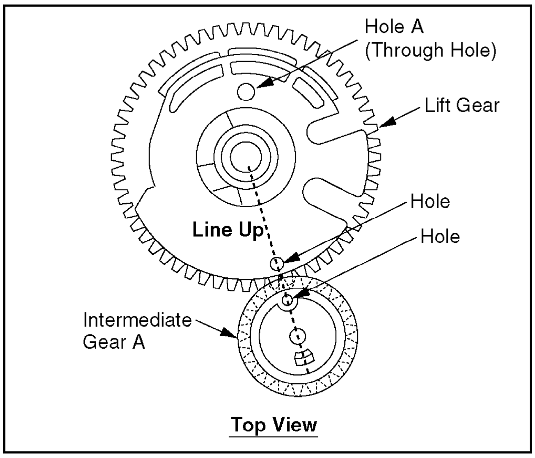
1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Rod**
    - **A. Confirm that the hole on Main Rod is a Through Hole with a hole on chassis.**
    - **B. Confirm that the hole on Drive Rack Arm is a Through Hole with a hole on chassis.**
    - **C. Install the Main Cam Gear so that the projection of Main Cam Gear is in the upward position as shown.**

Fig. J3-2


Projection of Main Cam Gear
Main Cam Gear
Through Hole
Chassis
Main Rod
Drive Rack Arm
Through Hole

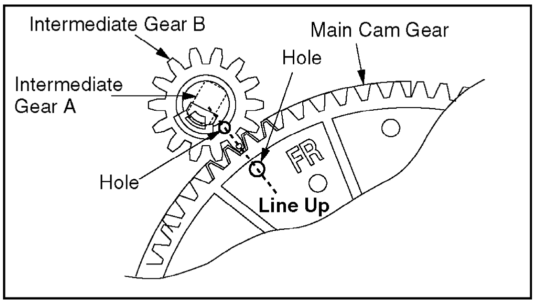
2. **Confirmation/Alignment of Intermediate Gear B, Main Cam Gear, and Intermediate Gear A**
   - **A. Confirm that the Hole A on Lift Gear is a Through Hole with a hole on chassis.**
   - **B. Confirm that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.**

Fig. J3-3


Hole A
(Through Hole)
Lift Gear
Hole
Hole
Line Up
Intermediate Gear A
Top View

   - **C. Install the Intermediate Gear B so that the hole on the Intermediate Gear B is aligned with the hole on the Main Cam Gear.**

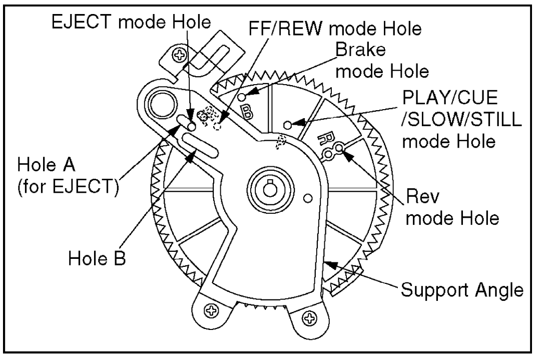
Fig. J3-4


Intermediate Gear B
Main Cam Gear
Hole
Intermediate Gear A
Hole
FR
Line Up

3. **Holes on Main Cam Gear**
   - **A. The EJECT mode Hole on Main Cam Gear should be a Through**

Hole with Hole A on Support Angle in EJECT mode. The each mode Hole on Main Cam Gear should be a Through Hole with Hole B on Support Angle in each mode.

Fig. J3-5


EJECT mode Hole
FF/REW mode Hole
Brake
mode Hole
PLAY/CUE
/SLOW/STILL
mode Hole
Hole A
(for EJECT)
Rev
mode Hole
Hole B
Support Angle

4. Main Cam Gear Kit

A. Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0009).

Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut.

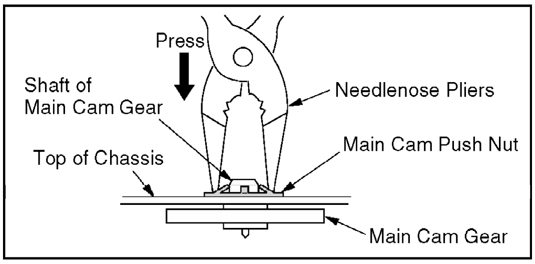
However, Main Cam Push Nut is available separately as a replacement part.

5. Installation of Main Cam Gear and Main Cam Push Nut

A. After installing the Support Angle, install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.

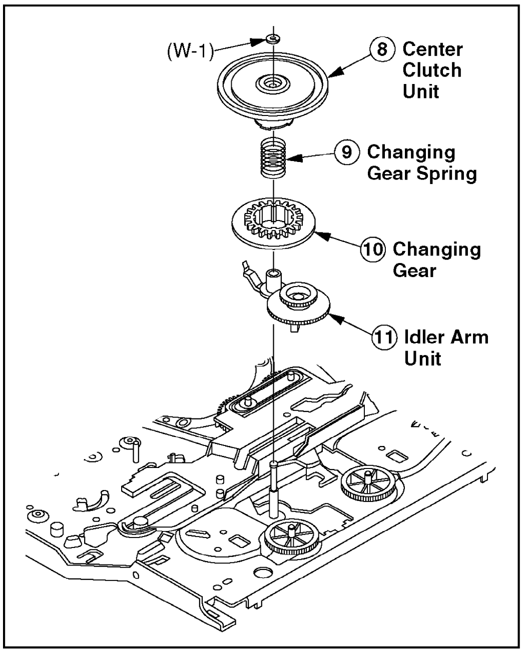
Fig. J3-6


Press
Shaft of
Main Cam Gear
Needlenose Pliers
Top of Chassis
Main Cam Push Nut
Main Cam Gear

6. The Main Cam Push Nut is not reusable. Install a new one.

6.2.6. Center Clutch Unit, Changing Gear Spring, Changing Gear, and Idler Arm Unit

Fig. J4-1

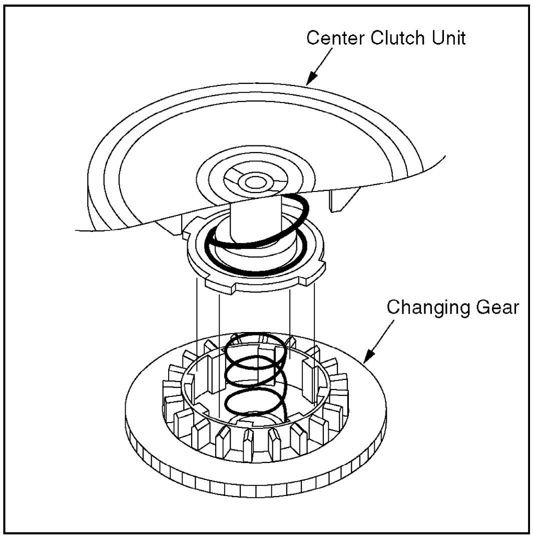

(W-1)
⑧ Center Clutch Unit
⑨ Changing Gear Spring
⑩ Changing Gear
⑪ Idler Arm Unit

6.2.6.1. Reassembly Notes

1. Installation of Center Clutch Unit

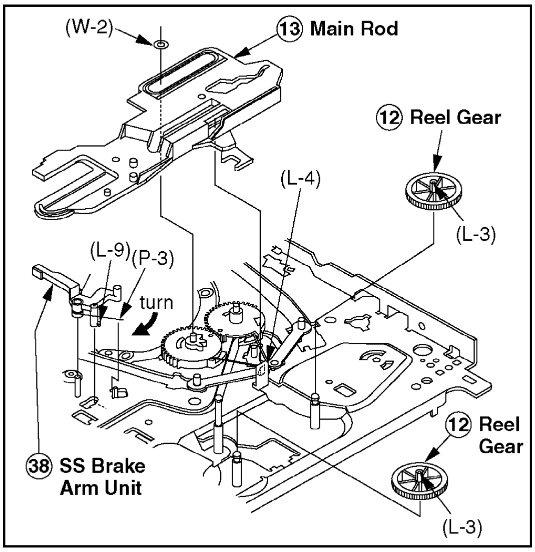
A. Fit the Center Clutch Unit into the Changing Gear.

Fig. J4-2


Center Clutch Unit
Changing Gear

6.2.7. Reel Gear, Main Rod, and SS Brake Arm Unit

Fig. J5-1

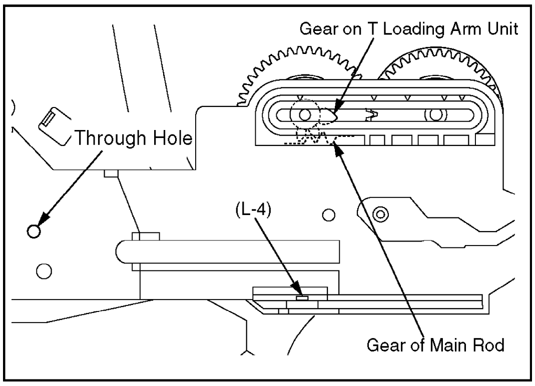

(W-2)
⑬ Main Rod
⑫ Reel Gear
(L-4)
(L-3)
(L-9)
(P-3)
turn
⑫ Reel Gear
㊳ SS Brake Arm Unit
(L-3)

6.2.7.1. Reassembly Notes

1. Alignment of Main Rod and T Loading Arm Unit

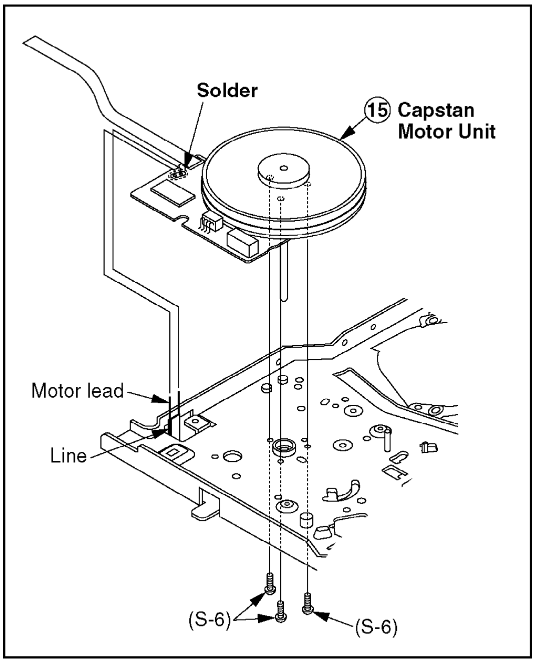
A. Align the Gear of T Loading Arm Unit with Gear of Main Rod. Confirm that the Hole on Main Rod is a Through Hole with a hole on chassis.

Fig. J5-2


Gear on T Loading Arm Unit
Through Hole
(L-4)
Gear of Main Rod

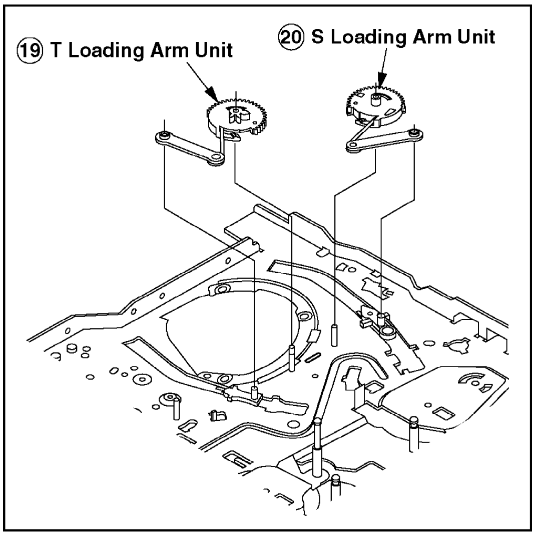
6.2.8. Capstan Motor Unit

Fig. J6


Solder
⑮ Capstan Motor Unit
Motor lead
Line
(S-6)
(S-6)

6.2.9. T Loading Arm Unit and S Loading Arm Unit

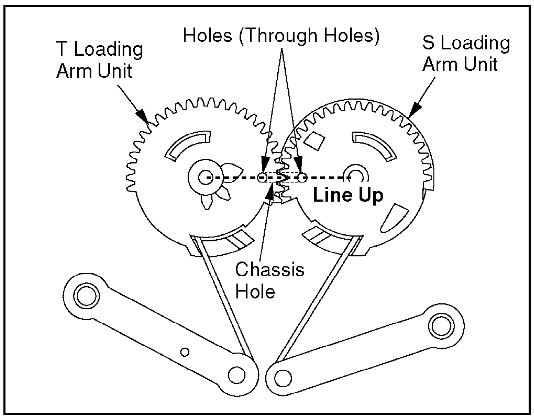
Fig. J7-1


⑲ T Loading Arm Unit
⑳ S Loading Arm Unit

6.2.9.1. Reassembly Notes

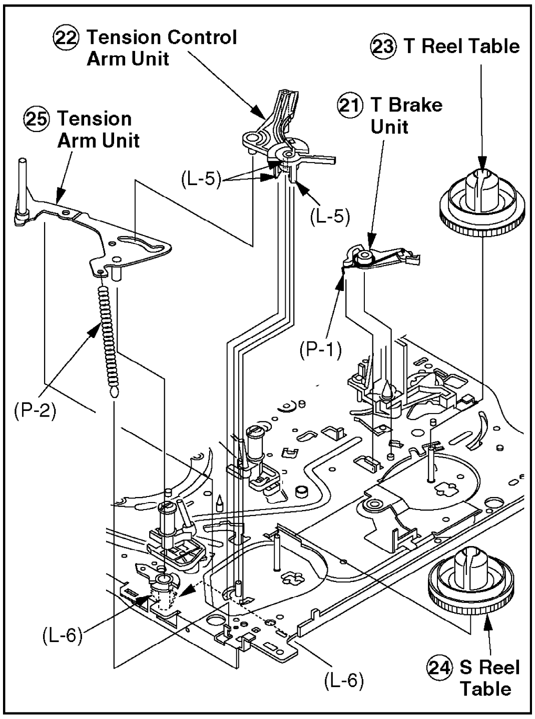
1. **Alignment of T Loading Arm Unit and S Loading Arm Unit**
   - **A. Install the S Loading Arm Unit onto the chassis.**
   - **B. Install the T Loading Arm Unit so that the hole on T Loading Arm Unit is aligned with the hole on S Loading Arm Unit.**
   - **C. Confirm that the holes on the S & T Loading Arm Unit are Through Holes with hole on chassis.**

Fig. J7-2


T Loading
Arm Unit
Holes (Through Holes)
S Loading
Arm Unit
Line Up
Chassis
Hole

6.2.10. T Brake Unit, Tension Control Arm Unit, T Reel Table, S Reel Table, and Tension Arm Unit

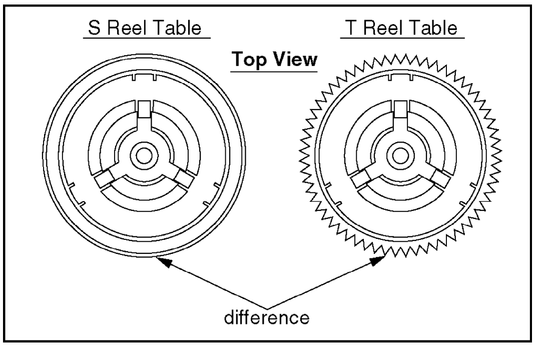
Fig. J8-1


㉒ Tension Control
Arm Unit
㉓ T Reel Table
㉑ T Brake
Unit
㉕ Tension
Arm Unit
(L-5)
(L-5)
(P-1)
(P-2)
(L-6)
(L-6)
㉔ S Reel
Table

6.2.10.1. Reassembly Notes

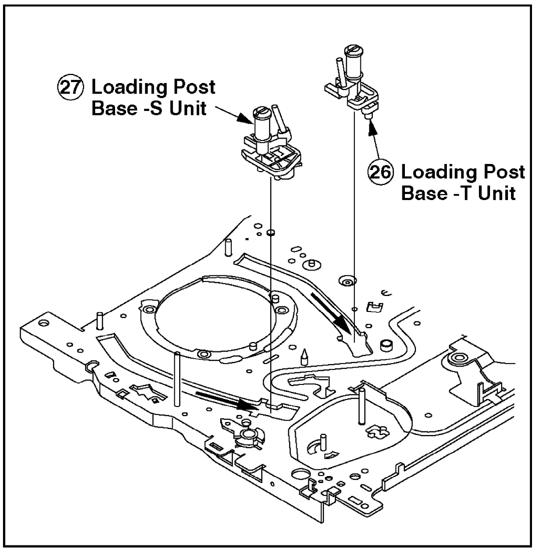
1. How to distinguish between S Reel Table and T Reel Table

Fig. J8-2


S Reel Table
T Reel Table
Top View
difference

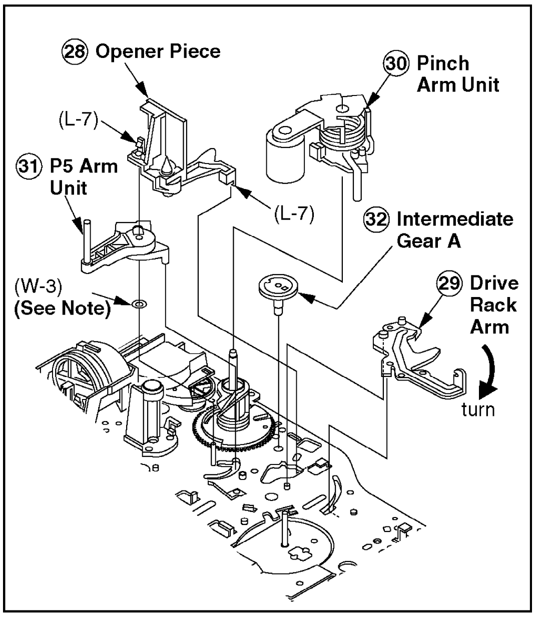
6.2.11. Loading Post Base -T Unit and Loading Post Base -S Unit

Fig. J9


㉗ Loading Post Base -S Unit
㉖ Loading Post Base -T Unit

6.2.12. Opener Piece, Drive Rack Arm, Pinch Arm Unit, P5 Arm Unit, and Intermediate Gear A

Fig. J10-1


㉘ Opener Piece
(L-7)
㉛ P5 Arm Unit
(W-3) (See Note)
㉚ Pinch Arm Unit
(L-7)
㉜ Intermediate Gear A
㉙ Drive Rack Arm
turn

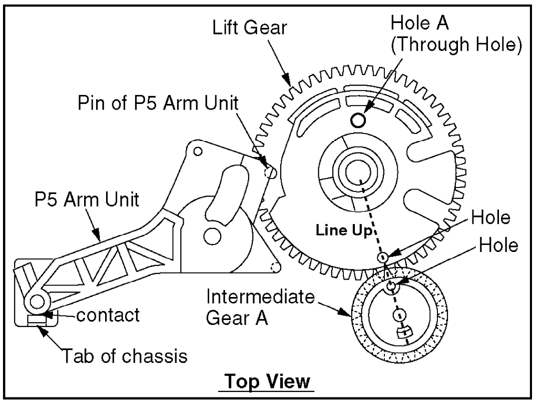
Note:

In early units, a washer is used. When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

6.2.12.1. Reassembly Notes

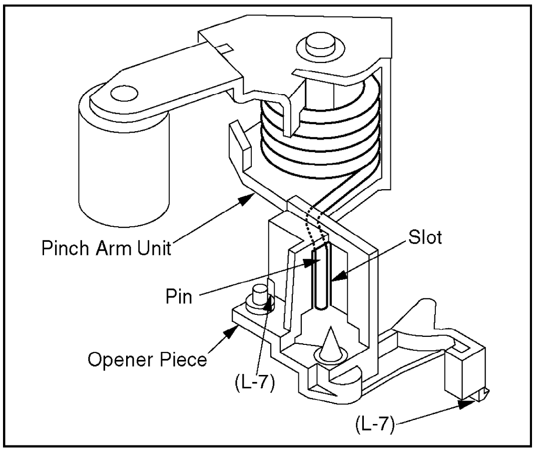
1. **Installation/Alignment of Intermediate Gear A, Lift Gear and P5 Arm Unit**
    - **A. Rotate the Lift Gear so that Hole A on Lift Gear is a Through Hole with a hole on chassis.**
    - **B. Install the Intermediate Gear A so that the hole on Intermediate Gear A is aligned with the hole on Lift Gear.**
    - **C. Install the P5 Arm Unit so that it contacts with the tab of chassis.**

Fig. J10-2


Lift Gear
Hole A
(Through Hole)
Pin of P5 Arm Unit
P5 Arm Unit
Line Up
Hole
Hole
contact
Intermediate
Gear A
Tab of chassis
Top View

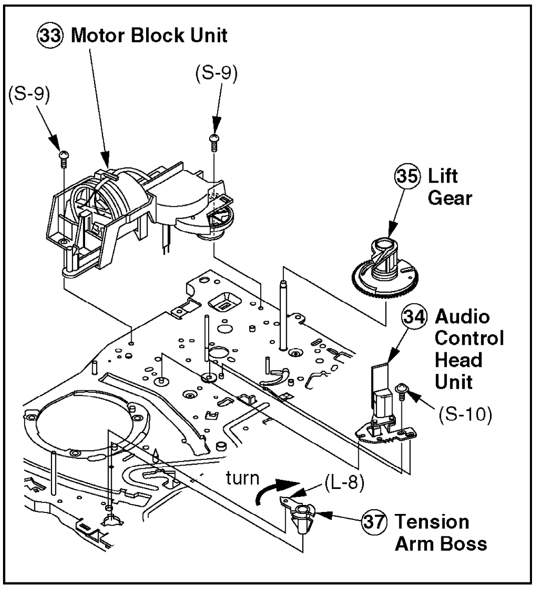
2. **Installation of Opener Piece**
    - **A. Install the Opener Piece so that the slot of the Opener Piece is inserted to the Pin of Pinch Arm Unit**

Fig. J10-3


Pinch Arm Unit
Slot
Pin
Opener Piece
(L-7)
(L-7)

6.2.13. Motor Block Unit, Audio Control Head Unit, Lift Gear and Tension Arm Boss

Fig. J11


㉝ Motor Block Unit
(S-9)
(S-9)
㉟ Lift Gear
㉞ Audio Control Head Unit
(S-10)
turn
(L-8)
㊲ Tension Arm Boss

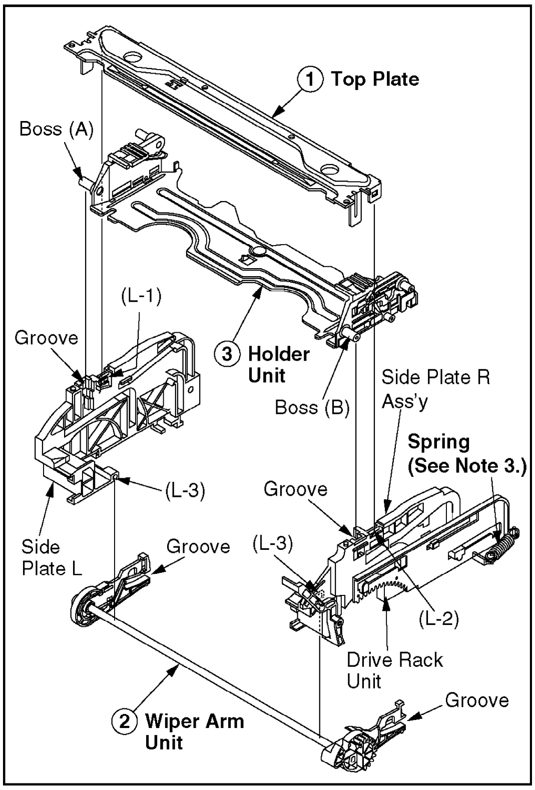
6.3. CASSETTE UP ASSEMBLY SECTION

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling. When reassembling, perform the step(s) in the reverse order.

Step/Loc. No.	Prior Step(s)	Part	Fig. No.	Remove	Alignment/Adjustment
①	-----------	Top Plate	K1-1	(L-1), (L-2)	
②	1	Wiper Arm Unit	K1-1	2(L-3)	Gear Alignment
③	1,2	Holder Unit	K1-1	-	
④	-----------	Opener Lever	K2	2(L-4)	
⑤	1,2,3,4	Drive Rack Unit	K2	-	

6.3.1. Top Plate, Wiper Arm Unit, and Holder Unit

Fig. K1-1

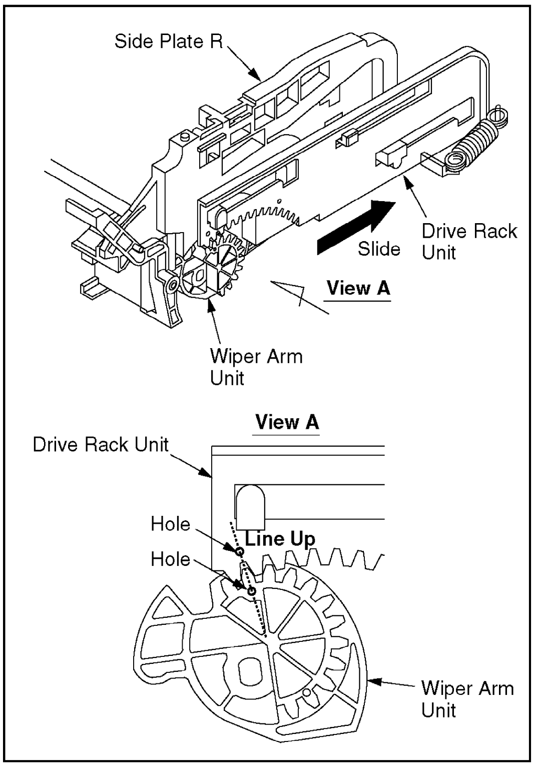

① Top Plate
Boss (A)
(L-1)
Groove
③ Holder Unit
Boss (B)
Side Plate R Ass'y
Spring (See Note 3.)
(L-3)
Groove
Side Plate L
Groove
(L-3)
(L-2)
Drive Rack Unit
Groove
② Wiper Arm Unit

6.3.1.1. Reassembly Notes

1. Alignment of Wiper Arm Unit and Drive Rack Unit

- **A. Slide the Drive Rack Unit to the far right as indicated by the arrow.**
- **B. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.**

Fig. K1-2


Side Plate R
Drive Rack Unit
Slide
View A
Wiper Arm Unit
View A
Drive Rack Unit
Hole
Hole
Line Up
Wiper Arm Unit

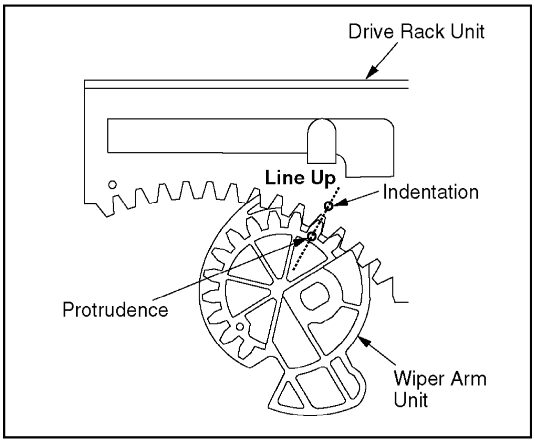
2. Installation of Holder Unit

A. Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.

B. Insert Holder Unit boss (A) and (B) into the grooves as shown in Fig. K1-1.

C. Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

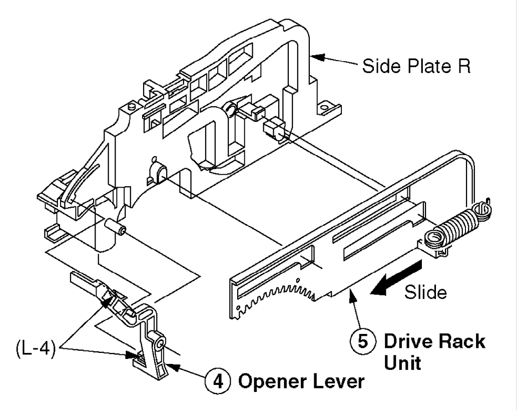
Fig. K1-3


Drive Rack Unit
Line Up
Indentation
Protrudence
Wiper Arm Unit

3. Make sure to hook the spring to the Drive Rack Arm of Mechanism chassis.

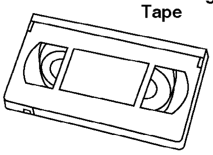
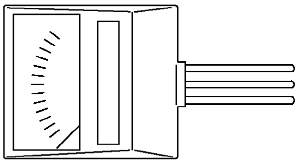
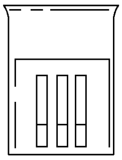
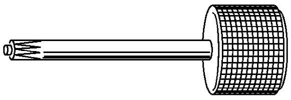
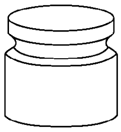
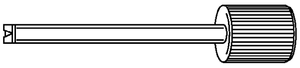
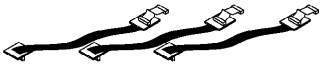
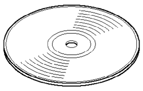
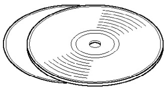
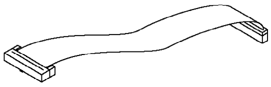
6.3.2. Opener Lever and Drive Rack Unit

Fig. K2



7. ADJUSTMENT PROCEDURES

7.1. SERVICE FIXTURES AND TOOLS

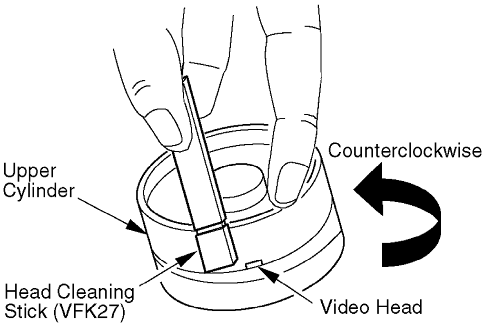
VFMS0003H6 **VHS Alignment Tape**  Video: Color Bar & Monoscope Audio: 6kHz(MONO)	**Back Tension Meter (Made in USA., Purchase Locally)** 	**VFK27** **Head Cleaning Stick** 
VFK0330 **H-Position Adjustment Driver** 	**VFKS0081** **Grease** 	**VFK0329** **Post Adjustment Driver** 
LSUA0034 **Extension Cable (3pcs)** 	**DVDT-S01** **DVD Test Disc** 	**Firmware Disc for DVD Drive** **Firmware Disc for DVD Decoder**  **Not supplied**
Connector Cable (IDE Cable)  **Not supplied (Purchase locally)**		

7.2. MECHANICAL ADJUSTMENT

7.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. **While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol.**
   When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

Fig. M1



Note:

1. **Do not rub vertically or apply excess pressure to the Video Heads. Do not turn the Upper Cylinder Unit clockwise while cleaning.**
2. **After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.**

7.2.2. ADJUSTMENT PROCEDURES

7.2.2.1. BACK TENSION CONFIRMATION

Purpose:

To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment:

1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.

2) If the tape tension is too high, the tape will soon be damaged.

Equipment Required:

Back Tension Meter (Made in U.S.A., Purchase Locally)
VHS Cassette Tape (120-Minute Tape)

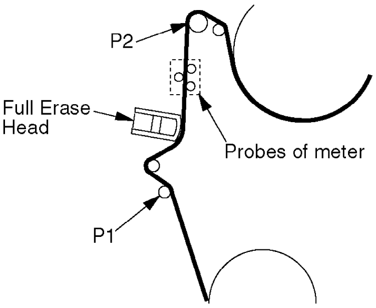
Specification:

22.4 gf±2.5 gf

(0.220 N±0.025 N)

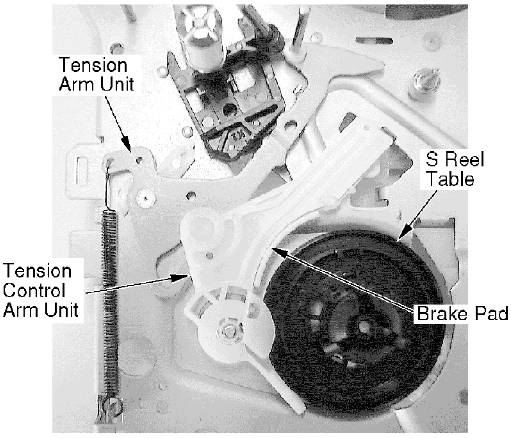
1. **Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.**
2. **Insert a Tension Meter into tape path and measure the back tension.**

Fig. M2-1


P2
Full Erase Head
Probes of meter
P1

3. **If the reading is out of specification, make sure that there is no dust or foreign material between the Brake Pad of Tension Control Arm Unit and the S Reel Table.**
   After cleaning, the reading of tension measurement is still out of specification, replace the Tension Arm Unit and the Tension Control Arm Unit.

Fig. M2-2


Tension Arm Unit
S Reel Table
Tension Control Arm Unit
Brake Pad

Note:

1. **Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.**
2. **It is recommended that measurements should be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.**

7.2.2.2. TAPE INTERCHANGEABILITY ADJUSTMENT

Note:

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:

Dual Trace Oscilloscope
VHS Alignment Tape (VFMS0003H6)
Post Adjustment Driver (VFK0329)
H-Position Adjustment Driver (VFK0330)

7.2.2.2.1. ENVELOPE OUTPUT ADJUSTMENT

The height of the P2 and P3 Posts replacement part is preadjust at the factory.

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

Equipment Required:

Post Adjustment Driver (VFK0329)

1. Place a jumper between TP6003 and +5 V(TP6009) on the Main C.B.A. to defeat Auto Tracking.
2. Eject the tape and insert it again to access the Neutral Tracking position.
3. Play back the alignment tape.
4. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
5. Confirm that the RF envelope is flat enough (V1/V-max. is 0.7 or more). If not, with Post Adjustment Driver, adjust P2 and P3 post height so that the envelope waveform becomes as flat (V1/V-max. is 0.7 or more) as possible (Noenvelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.
   CAUTION:

Overtightening P2 and P3 posts may cause the threads to strip.

Note:

It will be possible to confirm Step 5 according to following steps.

1. **Press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.**

Fig. M3-1

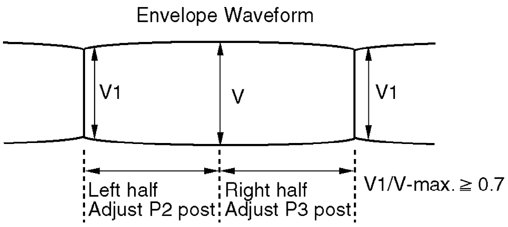
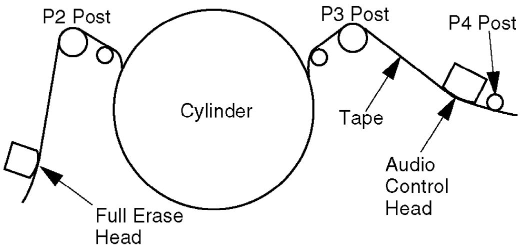
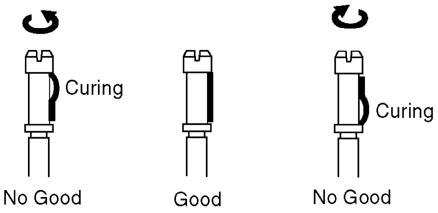

Envelope Waveform
V1
V
V1
Left half
Adjust P2 post
Right half
Adjust P3 post
V1/V-max. ≧ 0.7

Fig. M3-2


P2 Post
P3 Post
P4 Post
Cylinder
Tape
Audio
Control
Head
Full Erase
Head

6. **After adjustment, confirm that the tape travels without curling at P2 and P3 posts.**

Fig. M3-3


Curing
Curing
No Good
Good
No Good

7. **Remove the jumper after completing the adjustment procedure.**

7.2.2.2.2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose:

To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

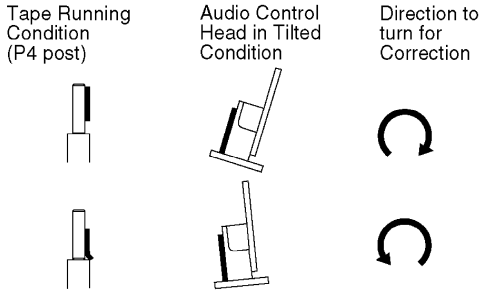
Symptom of Misadjustment:

If the tilt of the Audio Control Head is poorly adjusted, the tape

will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

Fig. M4


Tape Running Condition (P4 post)
Audio Control Head in Tilted Condition
Direction to turn for Correction

7.2.2.2.3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose:

To be sure the tape runs properly along the Control Head.

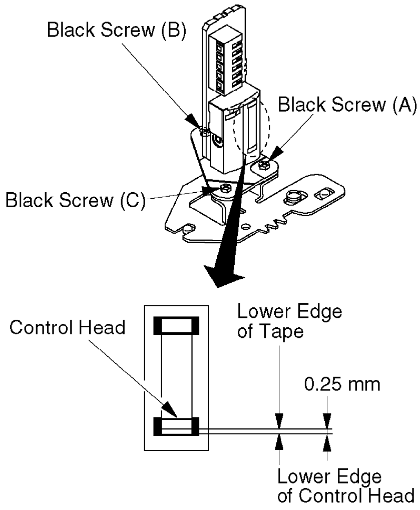
Symptom of Misadjustment:

If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.
2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

Fig. M5


Black Screw (B)
Black Screw (A)
Black Screw (C)
Control Head
Lower Edge of Tape
0.25 mm
Lower Edge of Control Head

7.2.2.2.4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose:

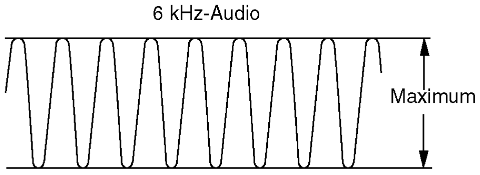
To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment:

If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. **Connect the oscilloscope to the TP4002 on the Main C.B.A.**
2. **Play back the 6 kHz Monaural Audio portion of the alignment tape.**
3. **Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.**

Fig. M6



4. **Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).**

7.2.2.2.5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose:

To adjust the Horizontal Position of the Audio Control Head.

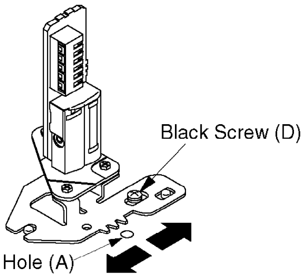
Symptom of Misadjustment:

If the Horizontal Position of the Audio Control Head is not

properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. **Place a jumper between TP6003 and +5 V(TP6009) on the Main C.B.A. to defeat Auto Tracking.**
2. **Eject the tape and insert it again to access the Neutral Tracking position.**
3. **Play back the alignment tape.**
4. **Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.**
5. **Loosen the Black Screw (D) and tighten it slightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.**

Fig. M7



6. **Tighten Black Screw (D).**
7. **Remove the jumper between TP6003 and +5 V(TP6009).**

Note:

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

7.3. ELECTRICAL ADJUSTMENT

NOTE:

Following Adjustments have been preadjusted at factory and are not required.

- Purity Adjustment
- Static Central Convergence Adjustment
- Dynamic Convergence Adjustment

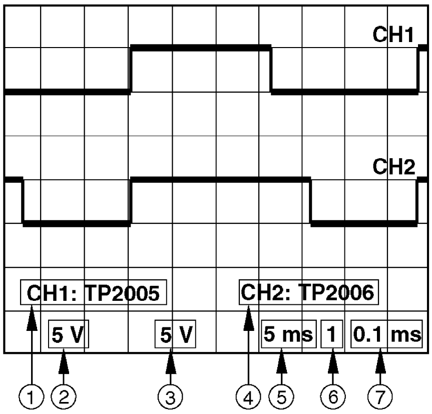
7.3.1. TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. **Dual-Trace Oscilloscope**
   Voltage Range: 0.001 V to 50 V/Div.
   Frequency Range: DC to 50 MHz
   Probes: 10:1, 1:1
2. **NTSC Video Pattern Generator**
3. **DVM (Digital Volt Meter)**
4. **MTS/SAP Signal Generator**
   (TV Multi-Channel Sound Modulator (U.S.A.))
5. **Plastic Tip Driver and Non-Metal Driver**
6. **Isolation Transformer (Variable)**
7. **VHS Alignment Tape (VFMS0003H6)**
8. **Degaussing Coil**
9. **White Pattern Generator**
10. **Audio Generator**
11. **DVD Test Disc**

7.3.2. HOW TO READ THE ADJUSTMENT PROCEDURES

Fig. E1



1. Connecting Point
3. Volts/DIV
5. Time/DIV
7. Time/DIV for Delay

2. Volts/DIV
4. Connecting Point
6. Trigger Channel of the Scope
   1 : CH1
   2 : CH2

7.3.3. STEREO/SAP SEPARATION ADJUSTMENT

Note:

Remove the DVD unit before performing this adjustment.

Purpose:

To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:

The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point :

TP9001 (Audio C.B.A.)

Adjustment :

R9001, R9008 (Audio C.B.A.)

Specification :

minimum level

INPUT :

Antenna Input Terminal
MTS (ONLY L CH)
300 Hz±5 Hz, 3 kHz±5 Hz
14 % or 7 % Modulating

Mode :

STEREO audio (TV)

Equipment :

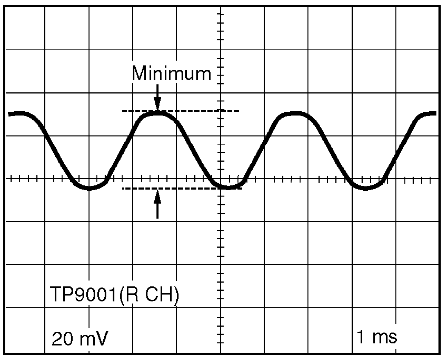
Oscilloscope,
MTS/SAP Signal Generator

1. Set to TV mode, and then set to STEREO audio.
2. Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.
   Then, set the MTS/SAP Signal Generator as follows.
   MTS (ONLY L CH)
   300 Hz±5 Hz
   14 % or 7 % Modulating
3. Connect the Oscilloscope to TP9001 on the Audio C.B.A.
4. Adjust R9001 (SEP (L)) on the Audio C.B.A. so that the signal level of TP9001 is minimum.
5. Set the MTS/SAP Signal Generator as follows.
   MTS (ONLY L CH)

3 kHz±5 Hz
14 % or 7 % Modulating

6. Adjust R9008 (SEP (H)) on the Audio C.B.A. so that the signal level of TP9001 is minimum.

Fig. E2



7.3.4. SEPARATION ADJUSTMENT

Note:

Be sure to perform this adjustment after STEREO/SAP SEPARATION ADJUSTMENT are completed.

Purpose:

To separate the L and R Channels of Stereo Signal.

Symptom of Misadjustment:

The L and R Channels of Stereo Signal will not be separated properly resulting in no stereophonic effect.

Test Point :

Pin 19 of P4203 or TP4202 (Audio C.B.A.)

Adjustment :

R9003 (Audio C.B.A.)

Specification :

minimum level

INPUT :

Antenna Input Terminal
MTS (ONLY L CH)
300 Hz±5 Hz
14 % or 7 % Modulating

Mode :

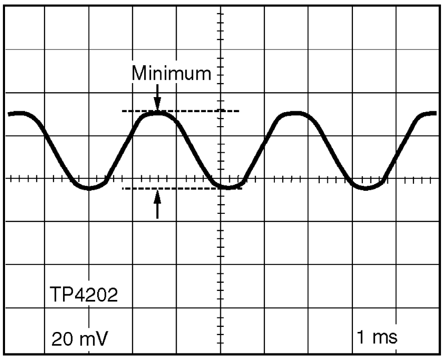
STEREO audio (TV)

Equipment :

Oscilloscope, MTS/SAP Signal Generator

1. **Connect the RF OUTPUT of the MTS/SAP Signal Generator to the Antenna Input Terminal.**
2. **Connect the Oscilloscope to Pin 19 of P4203 or TP4202 on the Audio C.B.A**
3. **Set to TV mode, and then set to STEREO audio.**
4. **Adjust R9003 on the Audio C.B.A. so that the signal level is minimum.**

Fig. E3



7.3.5. FM VCO ADJUSTMENT

Note:

Remove the DVD unit before performing this adjustment.

Purpose:

To set VCO free run frequency.

Symptom of Misadjustment:

Even when stereophony is received, only monaural sound will be output.

Test Point :

Pin 36 of P4204, TP9201 (Audio C.B.A.)

Adjustment :

R9206 (Audio C.B.A.)

Specification :

38.0 kHz±50 Hz

INPUT :

Mode :

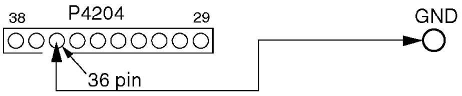
STEREO audio (FM Radio)

Equipment :

Frequency Counter

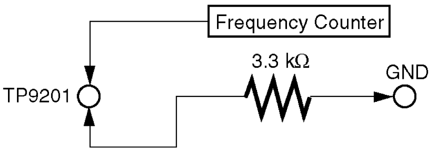
1. Connect Pin 36 of P4204 on Audio C.B.A. to GND.

Fig. E4-1



2. Connect TP9201 on Audio C.B.A. to GND through a resistor (3.3 k Ω). Then, connect Frequency Counter to TP9201.

Fig. E4-2



3. Adjust R9206 (FM VCO) so that the frequency is 38.0 kHz ±50 Hz.

7.3.6. DVD LUMINANCE LEVEL ADJUSTMENT

Purpose:

To set the optimum luminance level for DVD.

Symptom of Misadjustment:

The picture is too bright or too dark.

Test Point :

TP8201 (DVD DECODER C.B.A.)

Adjustment :

R8299 (DVD DECODER C.B.A.)

Specification :

1.0 V[P-P]±50 mV[P-P]

INPUT :

Mode :

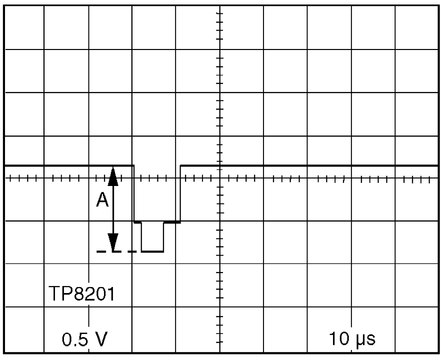
DVD PLAY

Equipment :

Oscilloscope, DVD Test Disc

1. **Playback 100% Flat Field on the DVD Test Disc in DVD PLAY Mode.**
2. **Connect the Oscilloscope to TP8201 on the DVD DECODER C.B.A. and GND (TP8203 on the DVD DECODER C.B.A.).**
3. **Adjust R8299 on the DVD DECODER C.B.A. so that the level A becomes 1.0 V[P-P]±50 mV[P-P].**

Fig. E5



7.3.7. EVR (Electronic Variable Register) ADJUSTMENT WITH THE REMOTE CONTROL

This unit has electronic technology using I2C Bus concept.The following control functions are adjusted by using "On Screen Displays" and the remote control instead of adjusting mechanical controls (VR).

Control functions	※1 Address	Range	Default
SUB COLOR	00	C0 - FF, 00 - 3F	20
SUB TINT	01	E0 - FF, 00 - 1F	00
SUB BRIGHT	02	C0 - FF, 00 - 3F	F0
CONTRAST	03	C1 - FF, 00	00
SUB SHARPNESS	04	E0 - FF, 00 - 1F	E2
R CUT -OFF	05	00 - 7F	1E
G CUT -OFF	06	00 - FD	3C
B CUT -OFF	07	00 - FD	3C
G DRIVE	08	00 - 7F	40
B DRIVE	09	00 - 7F	40
SUB CONTRAST	0A	00 - 0F	06
H-CENTER	0B	00 - 0F	08
V SIZE	0D	00 - 7F	40
V POSITION	0E	00 - 1F	02
PG SHIFTER	15	00 - FD	80

Bold-faced letters → Control functions which need to be adjusted.

Note:

※1 Address is not displayed on the TV screen.
Other Addresses except above are not used.

7.3.7.1. EVR ADJUSTMENT ITEM

The following Items need to be adjusted for EVR adjustment.

- **PG SHIFTER ADJUSTMENT**
- **SUB CONTRAST ADJUSTMENT**

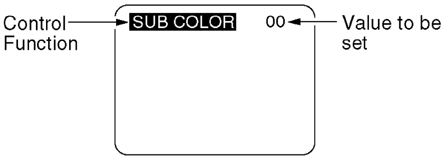
- **FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT**
- **SUB COLOR/SUB TINT ADJUSTMENT**
- **DEFLECTION ADJUSTMENT**
- **WHITE BALANCE ADJUSTMENT**
- **SUB BRIGHTNESS ADJUSTMENT**

7.3.7.2. How to enter EVR adjustment mode

Press and hold STOP/EJECT, PLAY/REPEAT and VOL- buttons of VCR operation panel on the unit together over 5 seconds with no cassette inserted.

The adjustment overlay will appear to Enter EVR adjustment mode.

Fig. E6-1



7.3.7.2.1. How to adjust:

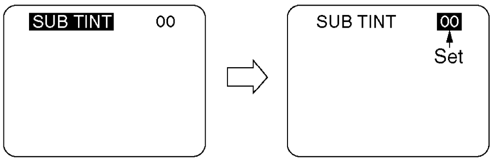
1. **Press UP/DOWN ▲ ▼ key on the remote control to select control function to be adjusted.**

   Important Note:

   Make a note of the original value of the controls before modifying in case the wrong control is adjusted.

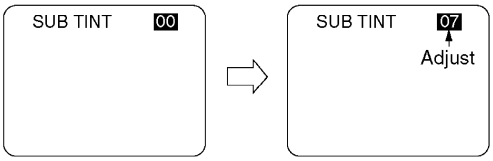
2. **Press RIGHT/LEFT ◀ ▶ key on the remote control so that the shaded area moves to the value.**

Fig. E6-2



3. **Press UP/DOWN ▲ ▼ key on the remote control to adjust the value of the selected control.**

Fig. E6-3



Note:

You can select a desired channel by using the numbered keys on the remote control in EVR adjustment mode.

4. Press RIGHT/LEFT ◀ ▶ key on the remote control so that the shaded area moves to the control function.

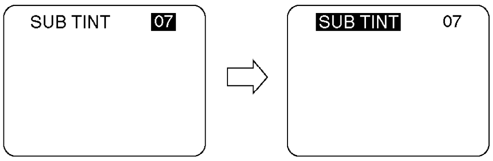

SUB TINT
07
SUB TINT
07

Fig. E6-4

5. Press UP/DOWN ▲ ▼ key on the remote control to select a control function for the next adjustment if necessary.

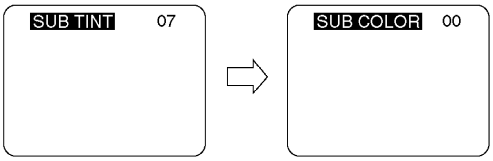

SUB TINT
07
SUB COLOR
00

Fig. E6-5

7.3.7.2.2. How to release from EVR Adjustment Mode:

Press and hold STOP/EJECT, PLAY/REPEAT and VOL- buttons of VCR operation panel on the unit together over 5 seconds again or press the POWER button OFF to release EVR adjustment mode. The adjusted value will be written to Memory IC(IC6004).

7.3.7.3. HOW TO ENTER EVR PG SHIFTER ADJUSTMENT MODE

1. Enter EVR adjustment mode.

2. Insert the VHS Alignment Tape and playback in SP mode. The adjustment overlay will appear.

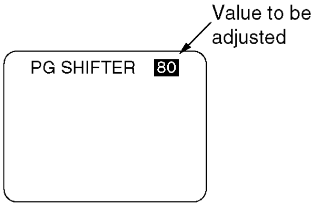

Value to be adjusted
PG SHIFTER
80

Fig. E6-6

7.3.7.3.1. How to adjust:

Press UP/DOWN ▲ ▼ key on the remote control to adjust the value.

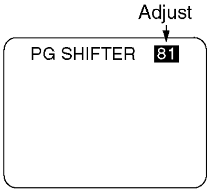

Adjust
PG SHIFTER
81

Fig. E6-7

7.3.7.4. HOW TO ENTER SERVICE MODE

1. Set the unit to TV Mode.

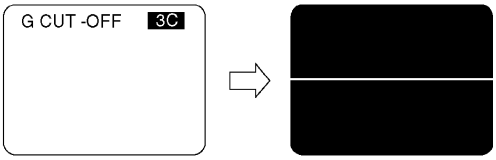
2. Enter EVR adjustment mode.

3. Press DISPLAY key on the remote control for collapse scan.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value for adjustments you will proceed.

Fig. E6-8



7.3.7.4.1. How to release from Service Mode:

Press DISPLAY key again on the remote control.

7.3.8. PG SHIFTER ADJUSTMENT

Purpose:

Determine the Video Head Switching Point during Playback.

Symptom of Misadjustment:

May cause Head Switching Noise and/or Vertical Jitter.

Test Point :

TP3001 (Main C.B.A.),
TP6205 (Main C.B.A.)

Adjustment :

PG SHIFTER (EVR)

Specification :

6 H±1 H (0.38 ms±0.06 ms)

INPUT :

Mode :

SP Playback

Equipment :

Oscilloscope,
VHS Alignment Tape (VFMS0003H6)

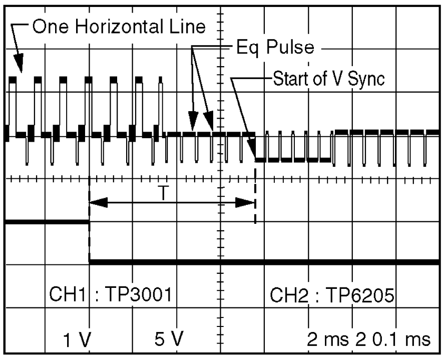
1. Insert the VHS Alignment Tape and playback in SP mode.

2. Connect the channel-1 scope probe to TP3001 and the channel-2

scope probe to TP6205. Used TP6205 as a trigger.

3. Select PG SHIFTER in EVR adjustment mode and adjust value so that the trailing edge of the head switching pulse is placed 6 H±1 H (0.38 ms±0.06 ms) before the start of the vertical sync pulse.

Fig. E7



7.3.9. SUB CONTRAST ADJUSTMENT

Purpose:

To set the optimum sub contrast level.

Symptom of Misadjustment:

The picture is too dark or too light.

Test Point :

Pin 5 of P6001 (Main C.B.A.)
or TP49 (CRT C.B.A.)

Adjustment :

SUB CONTRAST (EVR),

Specification :

1.8 V[p-p]±0.1 V[p-p]

INPUT :

Video Input Jack,
Crosshatch Pattern Signal 1 V[p-p]
(75 Ω terminated)

Mode :

STOP

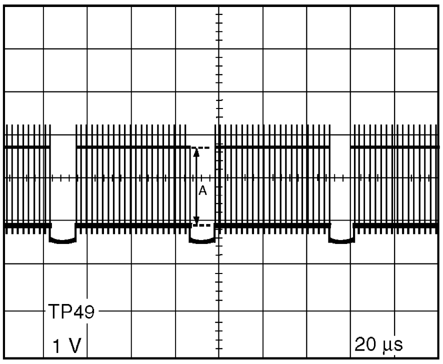
Equipment :

Oscilloscope,

NTSC Video Pattern Generator

1. Supply a Crosshatch Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to Pin 5 of P6001 on the Main C.B.A. or TP49 on the CRT C.B.A.
3. Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the (D0).
4. Select SUB CONTRAST in EVR adjustment mode and adjust so that the level A is 1.8 V[p-p]±0.1 V[p-p].
5. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

Fig. E8



7.3.10. FOCUS, SCREEN, CUT OFF, DRIVE ADJUSTMENT

Purpose:

To set the optimum Focus and Screen.

Symptom of Misadjustment:

The picture is out of Focus and there will be an improper screen color mix.

Test Point :

TP50 (CRT C.B.A.)

Adjustment :

FOCUS CONTROL (Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR),
B DRIVE (EVR),
G DRIVE (EVR),
B CUT -OFF (EVR),

G CUT -OFF (EVR),
R CUT -OFF (EVR)

Specification :
Refer to descriptions below.

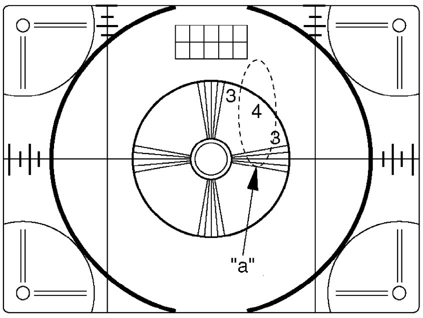
INPUT :
Video Input Jack,
Monoscope Pattern Signal

Mode :
STOP

Equipment :
Oscilloscope,
NTSC Video Pattern Generator

1. Supply a Monoscope Pattern Signal to the Video Input Jack.
2. Connect the Oscilloscope to TP50 on the CRT C.B.A.
   (Use TP47 for GND.)
3. Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.
4. Adjust the FOCUS CONTROL on the Flyback Transformer so that "a" is the sharpest.

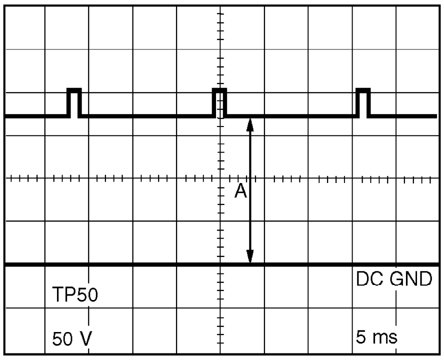
Fig. E9-1



5. Turn the SCREEN CONTROL on the Flyback Transformer fully counterclockwise.
6. Select SUB BRIGHT and move the shaded area to the data in EVR adjustment mode.
7. Press DISPLAY key on the remote control for collapse scan.
   (Refer to "HOW TO ENTER SERVICE MODE.")

8. Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 170 VDC±5 VDC.

Fig. E9-2



9. Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first observed.
10. In EVR adjustment mode, select the two colors not observed in step 9 from the following control functions (B CUT-OFF, G CUT-OFF or R CUT-OFF) and adjust so that the horizontal line becomes white.
    For example, if the horizontal line appeared red in step 9, select and adjust the B CUT-OFF and G CUT-OFF.
    (See NOTE)
11. Press DISPLAY key on the remote control again to return for full frame scan.
12. Select SUB BRIGHT in EVR adjustment mode and adjust so that the picture has adequate brightness.
13. Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

7.3.11. SUB COLOR/SUB TINT ADJUSTMENT

Purpose :

To set the standard color phase.

Symptom of Misadjustment :

Color phase will be shifted.

Test Point :

Pin 5 of P6001 (Main C.B.A.)
or TP49 (CRT C.B.A.)

Adjustment :

SUB COLOR (EVR),
SUB TINT (EVR),

Specification :

Refer to descriptions below.

Input :

Video Input Jack,
Rainbow Color Bar

Mode :

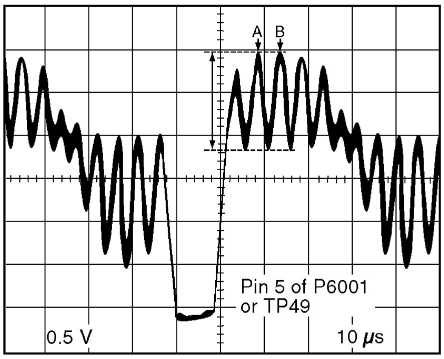
STOP

Equipment :

Oscilloscope,
NTSC Video Pattern Generator

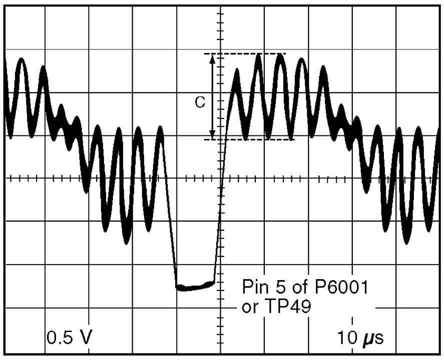
1. **Supply the Rainbow Color Bar signal to Video Input Jack.**
2. **Connect the Oscilloscope to Pin 5 of P6001 on the Main C.B.A. or TP49 on the CRT C.B.A.**
3. **Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of original value, adjust to the (C0).**
4. **Select SUB TINT in EVR adjustment mode and adjust so that level A and B should be equal in amplitude.**

Fig. E10-1



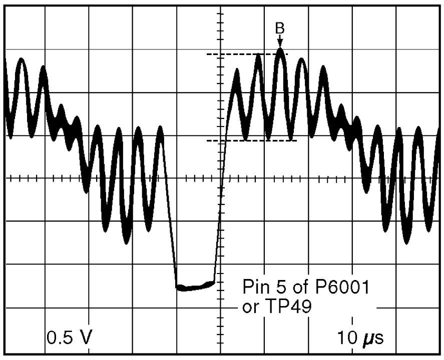
5. Select SUB COLOR in EVR adjustment mode and adjust which higher level that level C is 1.0 V[p-p]±0.15 V[p-p].

Fig. E10-2



6. Select SUB TINT in EVR adjustment mode and increase level B 1 clicks above the same level.

Fig. E10-3



7. Select SUB BRIGHT in EVR adjustment mode and reset to the original value.

7.3.12. DEFLECTION ADJUSTMENT

Purpose :

To set the standard vertical and horizontal picture size.

Symptom of Misadjustment :

The picture size is on the vertical and horizontal axis is abnormal.

Test Point :

Adjustment :

V SIZE (EVR),
H-CENTER (EVR)
V POSITION (EVR)

Specification :

Refer to descriptions below.

INPUT :

Video Input Jack,
Monoscope Pattern Signal

Mode :

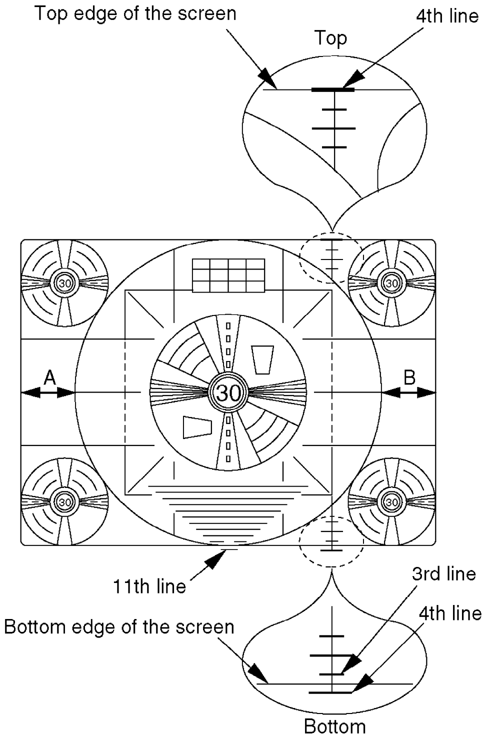
STOP

Equipment :

NTSC Video Pattern Generator

1. **Supply a Monoscope Pattern Signal to the Video Input Jack.**
2. **Select H-CENTER in EVR adjustment mode and adjust so that A is approximately equal to width B.**
3. **Select V SIZE in EVR adjustment mode and adjust so that the top 4th line is just in view.**
4. **Confirm that the bottom 3rd line is in view and that the bottom 4th line is out of view.**
5. **If the line are not positioned correctly, select V POSITION in adjustment mode and adjust correctly.**

Fig. E11


Top edge of the screen
Top
4th line
A
B
30
11th line
Bottom edge of the screen
3rd line
4th line
Bottom

7.3.13. WHITE BALANCE ADJUSTMENT

Purpose:

To set the standard white level for each color temperature.

Symptom of Misadjustment :

White becomes bluish or reddish.

Test Point :

TP50 (CRT C.B.A)

Adjustment :

FOCUS CONTROL (Flyback Transformer),
SCREEN CONTROL (Flyback Transformer),
SUB BRIGHT (EVR)
G DRIVE (EVR),
B DRIVE (EVR),
R CUT -OFF (EVR),
G CUT -OFF (EVR),
B CUT -OFF (EVR),

Specification :

Refer to descriptions below.

INPUT :

Video Input Jack,
Monoscope Pattern Signal,
White Pattern Signal

Mode :

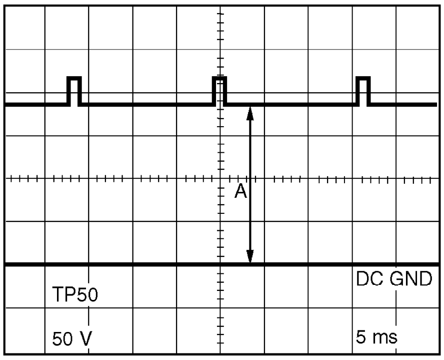
STOP

Equipment :

NTSC Video Pattern Generator,
White Pattern Generator,
Oscilloscope

1. **Supply a Monoscope Pattern Signal to the Video Input Jack.**
2. **Connect the Oscilloscope to TP50 on the CRT C.B.A. (Use TP47 for GND.)**
3. **Select SUB BRIGHT and move the shaded area to the value in EVR adjustment mode.**
4. **Adjust the FOCUS CONTROL on the Flyback Transformer so that the center of picture is the sharpest.**
5. **Press DISPLAY key on the remote control for collapse scan. (Refer to "HOW TO ENTER SERVICE MODE.")**
6. **Turn the SCREEN CONTROL on Flyback Transformer fully counterclockwise.**
7. **Adjust SUB BRIGHT in EVR adjustment mode so that the level A is 185 VDC±5 VDC.**

Fig. E12



8. **Turn the SCREEN CONTROL on the Flyback Transformer clockwise carefully and stop at the point where any color is first**

observed.

9. **In EVR adjustment mode, select the two colors not observed in step 8 from the following control functions (B CUT -OFF, G CUT -OFF, or R CUT -OFF) and adjust so that the horizontal line becomes white.**
   For example, if the horizontal line appeared red in step 8, select and adjust the B CUT -OFF and G CUT -OFF.
10. **Supply a White Pattern Signal to the Video Input Jack.**
11. **Press DISPLAY key on the remote control again to return for full frame scan.**
12. **Select G DRIVE and B DRIVE in EVR adjustment mode and adjust so that the entire screen is white.**
13. **Select SUB BRIGHT in EVR adjustment mode. Then, after making a note of the original value, adjust to the minimum (C0) and while turning SUB BRIGHT value from minimum (C0) up to maximum (3F), confirm that the screen is tracking the White Patternproperly. Repeat the above steps 5, 9, 11, and 12 until the screen is properly tracking the White Pattern.**

Note:

Before pressing DISPLAY key on the remote control for collapse scan, select the desired control function and move the shaded area to the value.

7.3.14. SUB BRIGHTNESS ADJUSTMENT

Note:

Perform this adjustment in a darkened room.

Purpose :

To set the optimum brightness level.

Symptom of Misadjustment :

The picture is too white or too black.

Test Point :

Adjustment :

SUB BRIGHT (EVR)

Specification :

Refer to descriptions below.

INPUT :

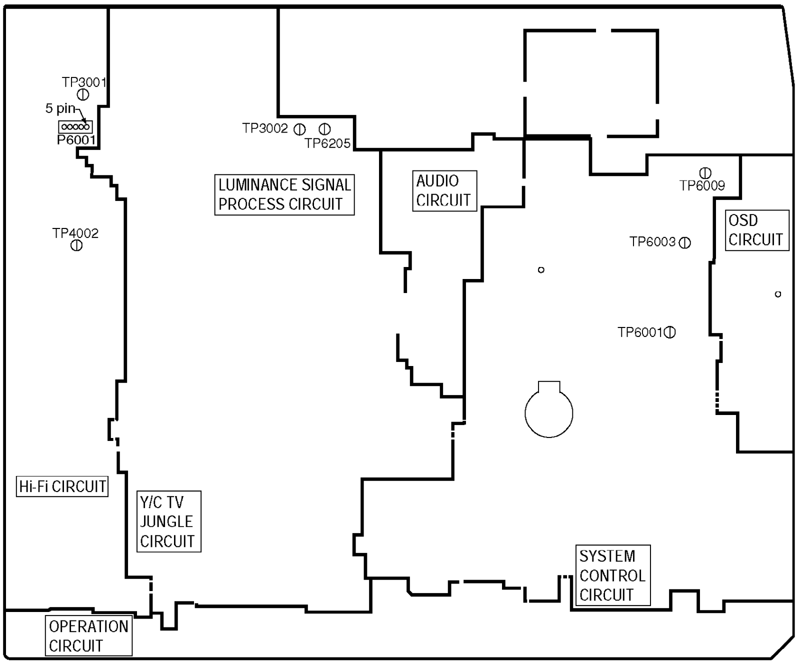
Mode :

STOP

1. **Do not input any signal to the unit.**
2. **Set INPUT SELECT item to LINE in SET UP TV menu to display black screen.**
3. **Select SUB BRIGHT in EVR adjustment mode, and adjust so that the black screen starts to turn gray (lighting only).**

7.4. TEST POINTS AND CONTROL LOCATION

Main C.B.A.


TP3001
5 pin
P6001
TP3002
TP6205
LUMINANCE SIGNAL PROCESS CIRCUIT
AUDIO CIRCUIT
TP6009
OSD CIRCUIT
TP6003
TP4002
TP6001
Hi-Fi CIRCUIT
Y/C TV JUNGLE CIRCUIT
SYSTEM CONTROL CIRCUIT
OPERATION CIRCUIT

(Component Side)

FUNCTION OF IMPORTANT TEST POINTS	
TP3001	Video Signal
TP3002	REC/PB Video envelope signal
TP4002	Normal Audio signal
TP6001	Service Test Point (inhibit sensors)
TP6003	Defeat Auto tracking function (connect to +5V(TP6009))
TP6009	+5V
TP6205	Head SW.

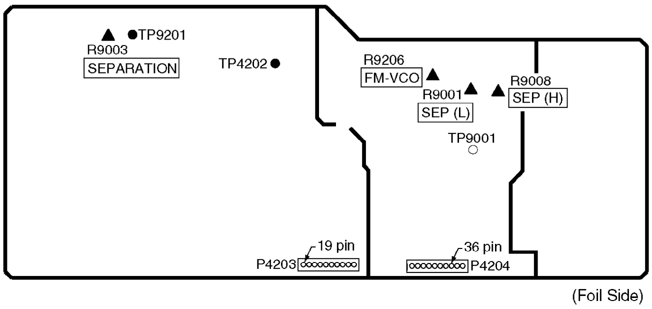
Test Point Information

● Test Point with a Test Pin.

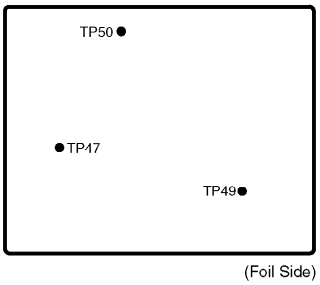
⦶ Test Point with a jumper wire across a hole in the P.C.B.

○ Test Point with no Test Pin.

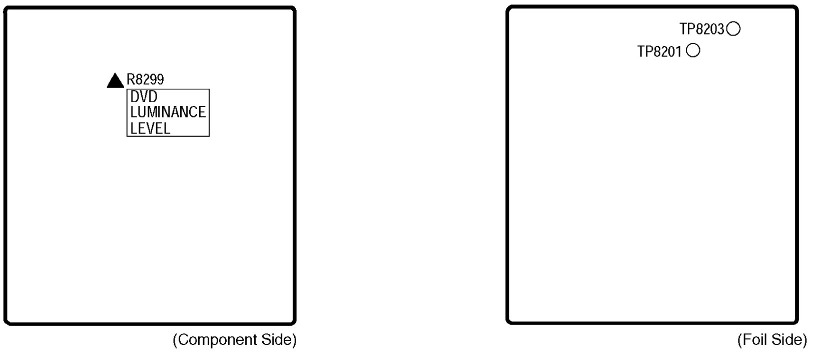
Audio C.B.A.


TP9201
R9003
SEPARATION
TP4202
R9206
FM-VCO
R9001
SEP (L)
R9008
SEP (H)
TP9001
19 pin
P4203
36 pin
P4204
(Foil Side)

CRT C.B.A.


TP50
TP47
TP49
(Foil Side)

DVD Decoder C.B.A.


R8299
DVD
LUMINANCE
LEVEL
(Component Side)
TP8203
TP8201
(Foil Side)

8. SCHEMATIC DIAGRAMS

8.1. SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

8.2. MAIN SCHEMATIC DIAGRAMS

8.3. AUDIO SCHEMATIC DIAGRAMS

8.4. AUDIO AMP SCHEMATIC DIAGRAM

8.5. POWER SUPPLY SCHEMATIC DIAGRAM

8.6. TV MAIN SCHEMATIC DIAGRAMS

8.7. CRT SCHEMATIC DIAGRAM

8.8. OPERATION SCHEMATIC DIAGRAM

8.9. Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

8.10. DVD DECODER SCHEMATIC DIAGRAMS

8.11. INTERCONNECTION SCHEMATIC DIAGRAM

8.12. VOLTAGE CHART

9. CIRCUIT BOARD LAYOUT

9.1. MAIN C.B.A.

9.2. AUDIO C.B.A.

9.3. TV MAIN C.B.A.

9.4. POWER SUPPLY C.B.A.

9.5. DVD DECODER C.B.A.

9.6. Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

9.7. CRT C.B.A.

9.8. AUDIO AMP C.B.A.

9.9. OPERATION C.B.A.

10. BLOCK DIAGRAMS

11. EXPLODED VIEWS

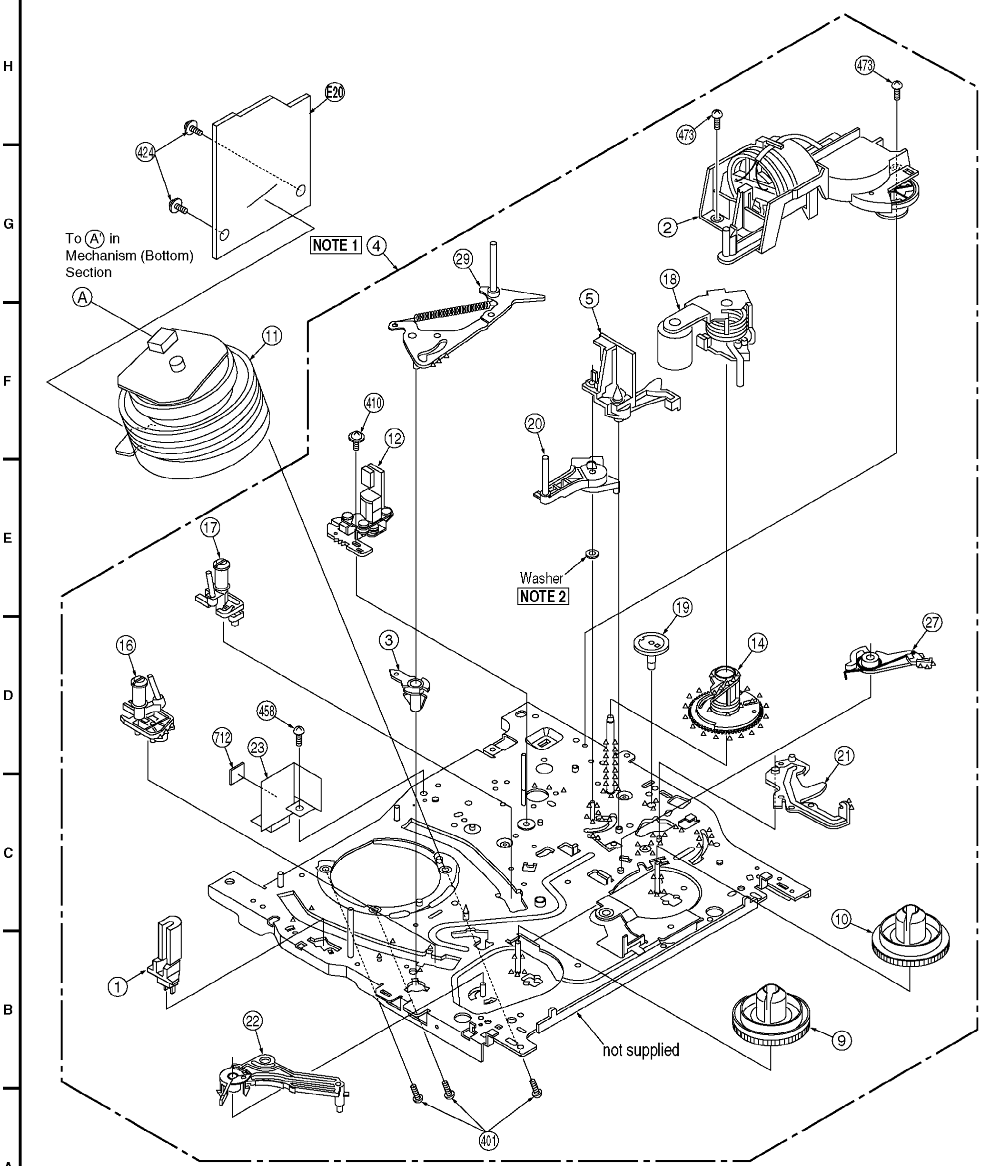
11.1. MECHANISM (TOP) SECTION

❶ MECHANISM (TOP) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied.
And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.


H
G
F
E
D
C
B
A
E20
424
To Ⓐ in Mechanism (Bottom) Section
Ⓐ
NOTE 1
4
11
29
473
473
2
18
5
410
12
20
Washer
NOTE 2
17
16
3
19
14
27
458
712
23
21
10
1
22
9
not supplied
401
1
2
3
4
5
6

NOTE 1: The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61). After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

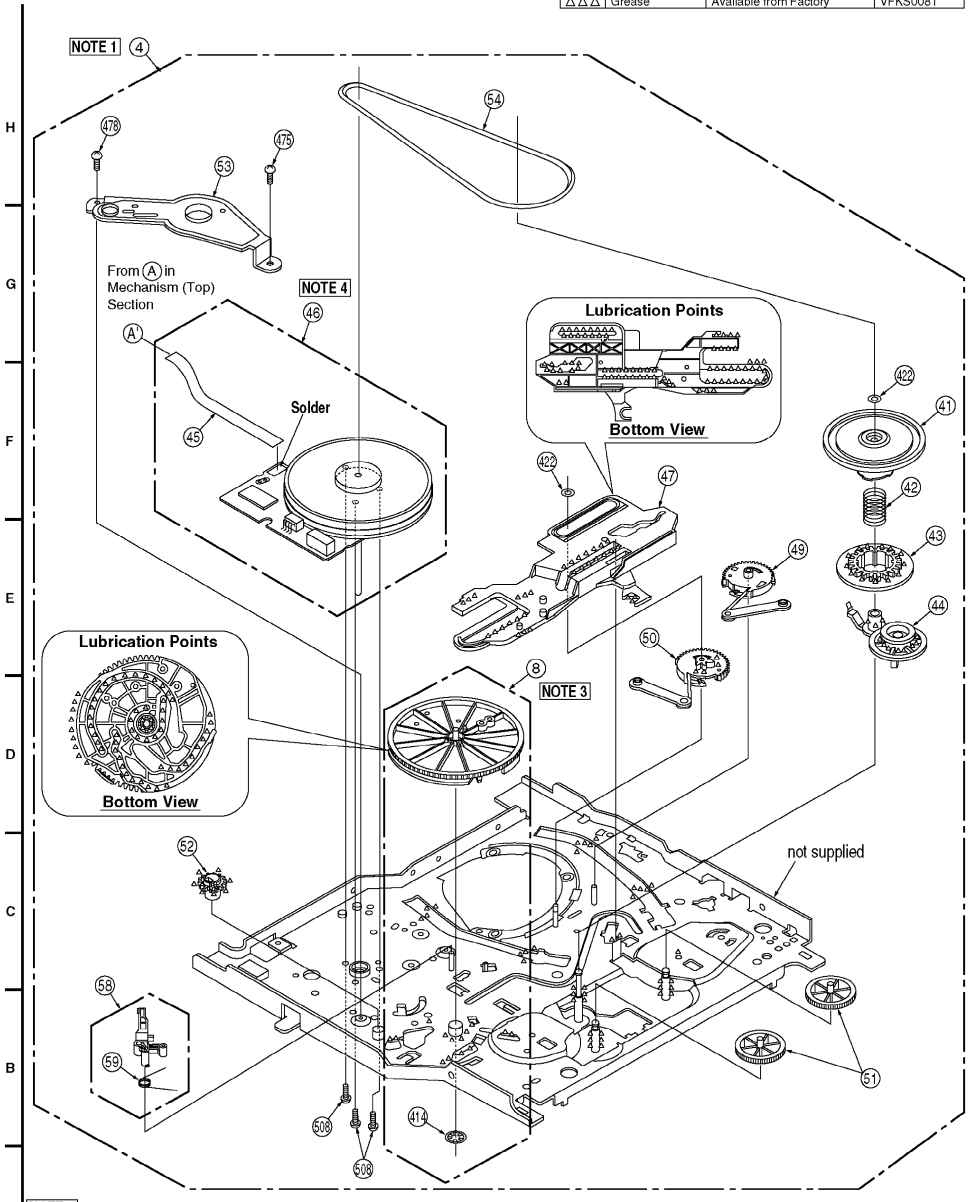
NOTE 2: In early units, a washer is used.
When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.

11.2. MECHANISM (BOTTOM) SECTION

❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081


NOTE 1
④
478
475
53
54
From Ⓐ in Mechanism (Top) Section
NOTE 4
46
A'
Solder
45
Lubrication Points
Bottom View
422
41
42
47
43
49
44
50
8
NOTE 3
Lubrication Points
Bottom View
52
not supplied
58
59
51
508
414
508
H
G
F
E
D
C
B
A
1
2
3
4
5
6

NOTE 1: The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61). After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

NOTE 3: Main Cam Gear is supplied as a Main Cam Gear Kit only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.

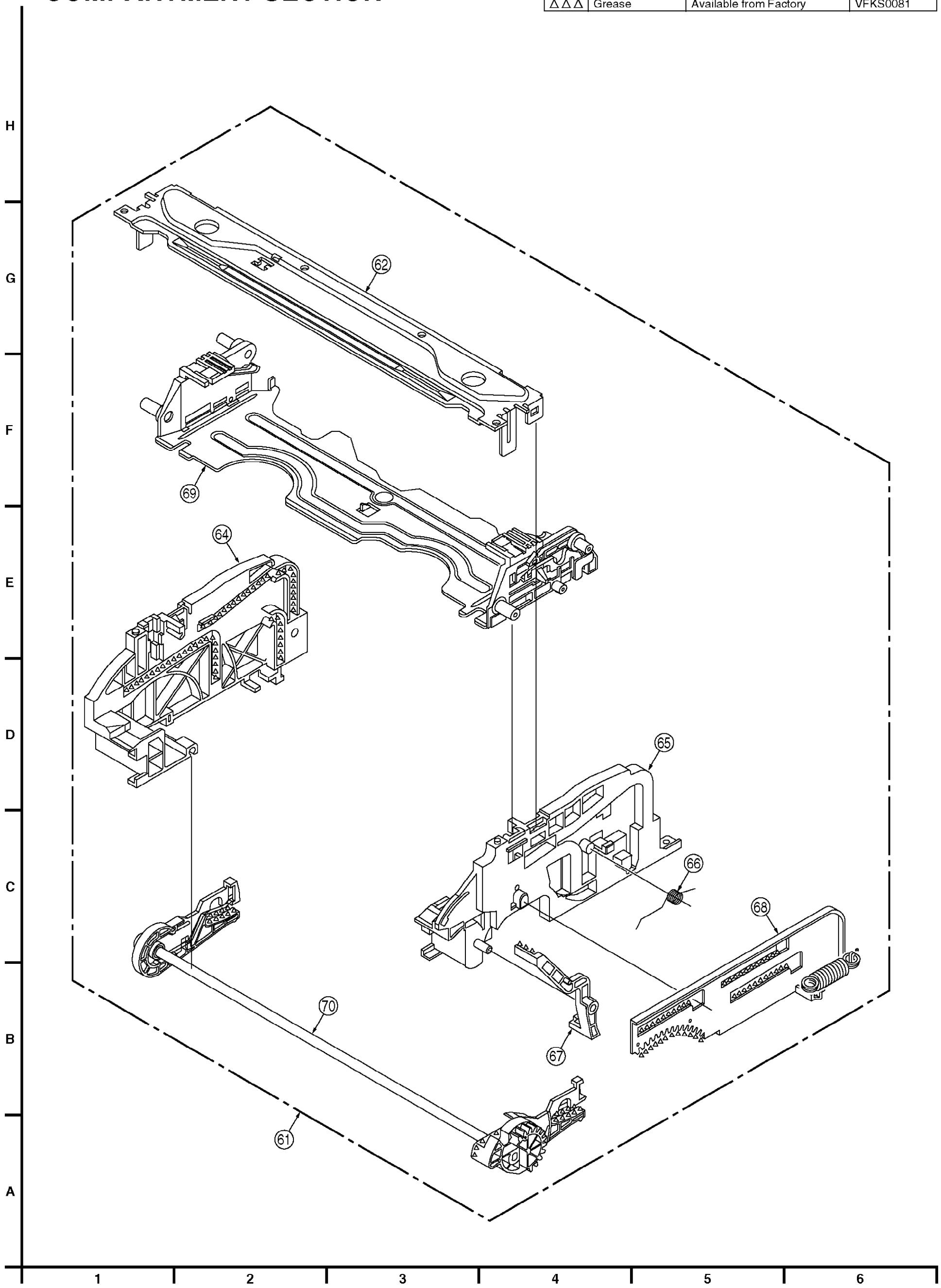
NOTE 4: The Capstan Motor Ass'y (Ref. No. 46) is supplied as a unit only. However, the Flat Flexible Cable (Ref. No. 45) is available separately as a replacement part.

11.3. CASSETTE UP COMPARTMENT SECTION

❸ CASSETTE UP COMPARTMENT SECTION

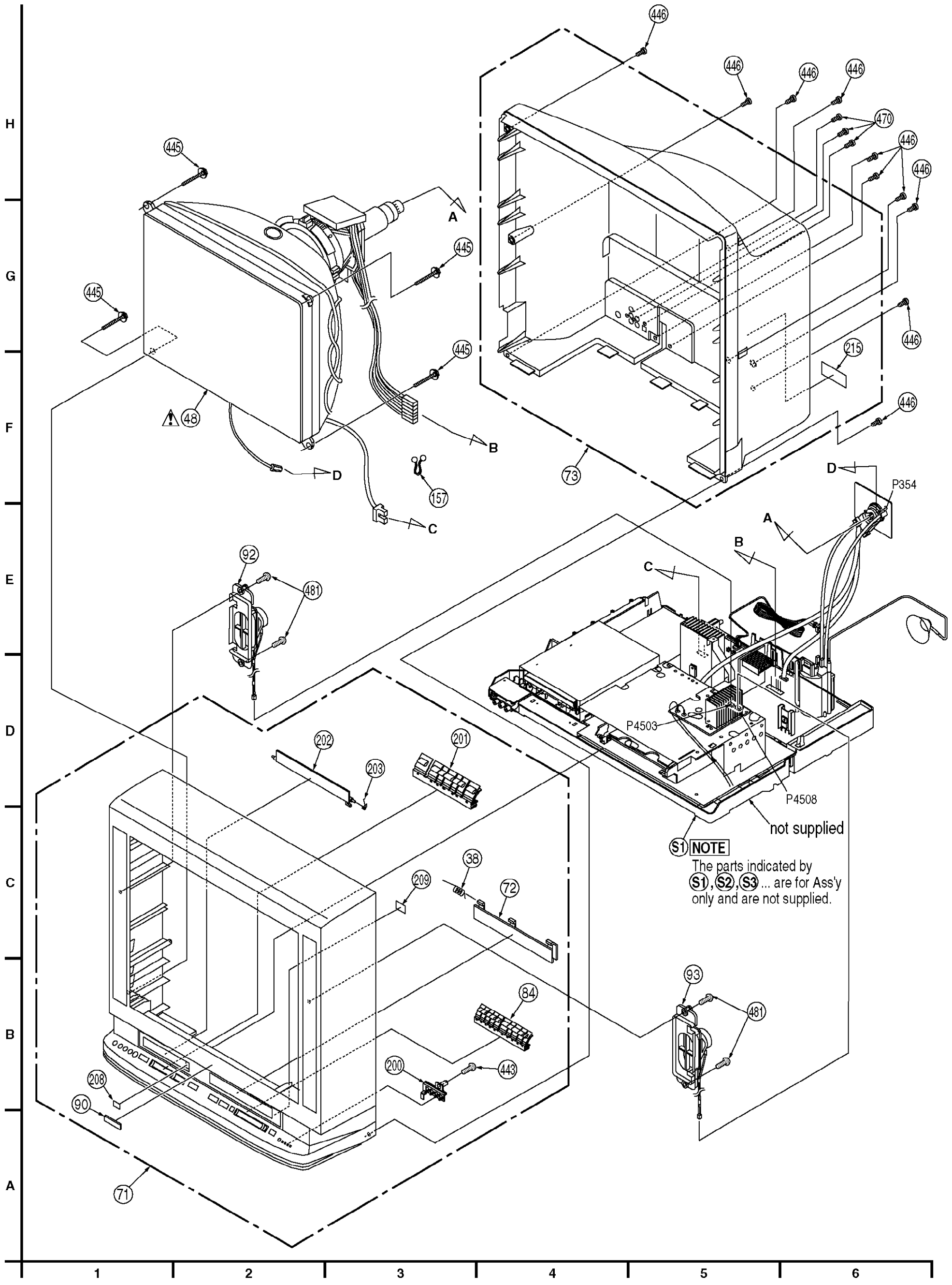
LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
△△△	Grease	Available from Factory	VFKS0081


H
G
F
E
D
C
B
A
1
2
3
4
5
6
62
69
64
65
66
68
67
70
61

11.4. CHASSIS FRAME SECTION (1)

❹ CHASSIS FRAME SECTION (1)

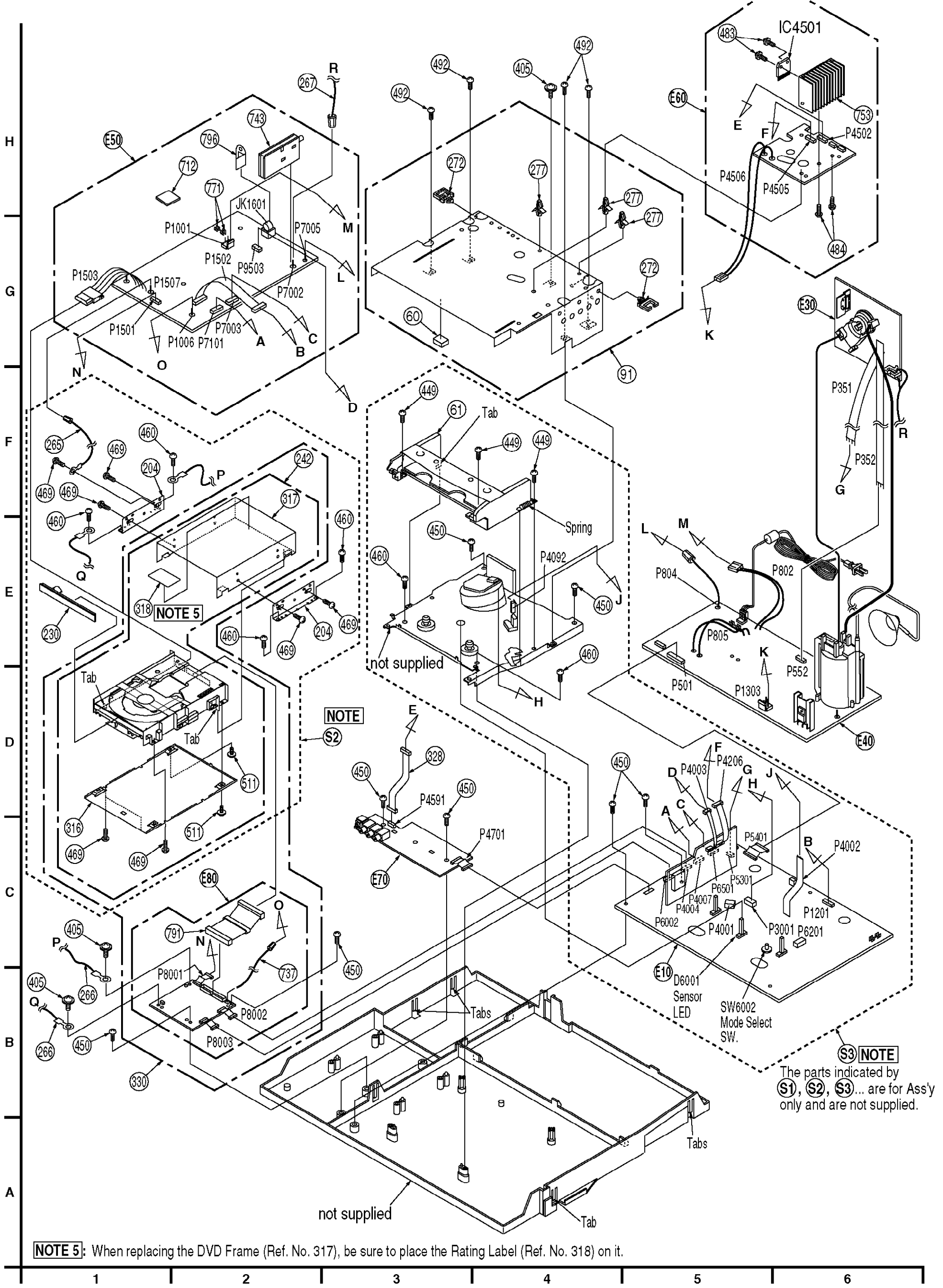

H
G
F
E
D
C
B
A
1
2
3
4
5
6
446
446
446
446
470
446
446
446
446
215
445
445
445
445
A
B
C
D
48
157
73
D
P354
A
B
C
92
481
P4503
P4508
202
203
201
38
209
72
93
481
84
200
443
208
90
71

not supplied

Ⓢ1 NOTE
The parts indicated by
Ⓢ1, Ⓢ2, Ⓢ3 ... are for Ass'y
only and are not supplied.

11.5. CHASSIS FRAME SECTION (2)

❺ CHASSIS FRAME SECTION (2)



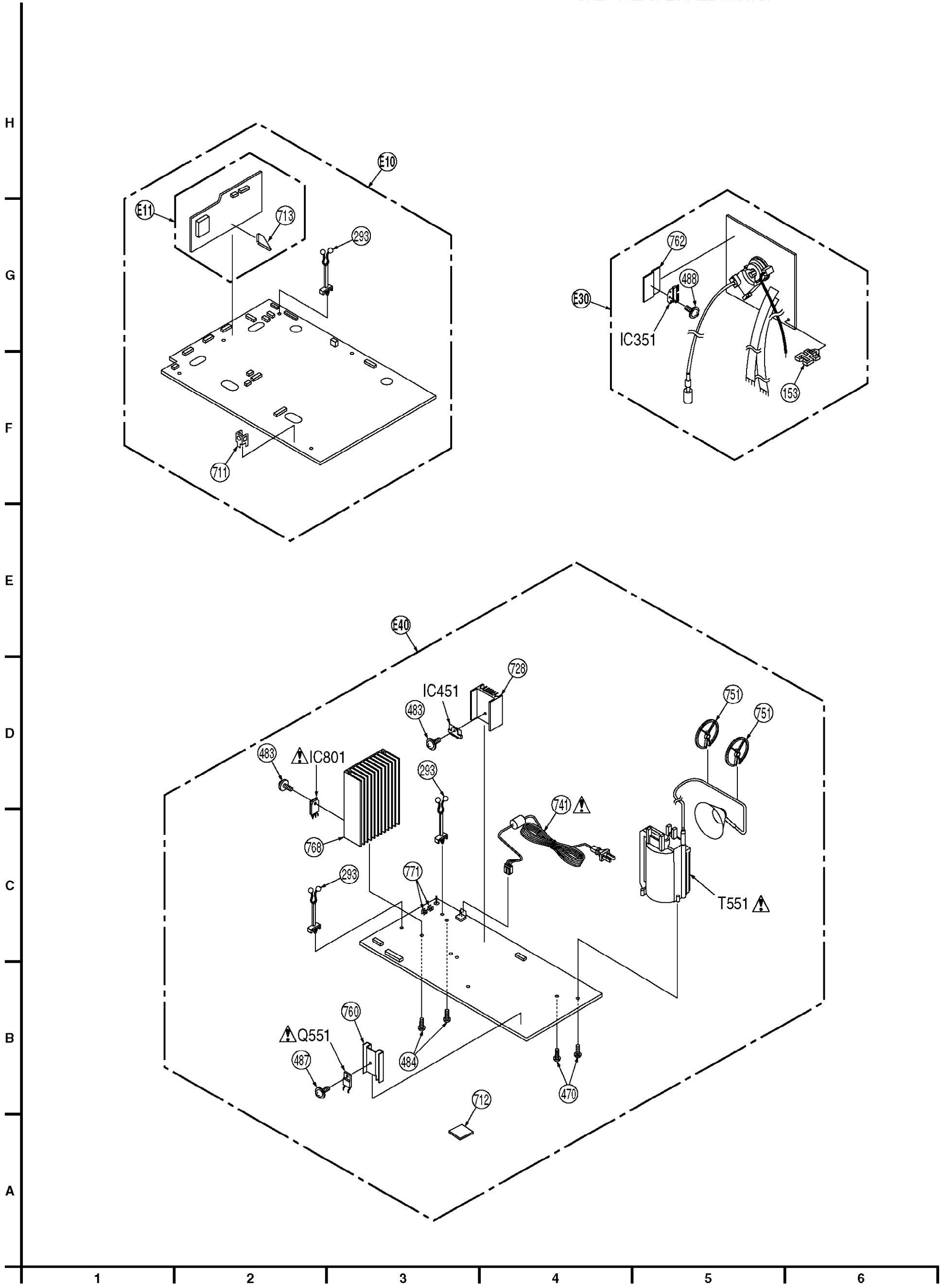
IC4501
483
753
P4502
E60
E
F
P4506
P4505
484
492
405
277
272
60
91
K
R
267
743
796
E50
712
771
JK1601
P1001
P7005
M
P1502
P9503
L
P1503
P1507
P7002
P1501
P1006
P7101
P7003
A
C
B
O
N
D
E30
P351
P352
G
449
61
Tab
Spring
450
460
P4092
J
not supplied
H
265
469
204
P
242
317
Q
318
NOTE 5
230
Tab
511
316
NOTE
S2
E
328
P4591
P4701
E70
L
M
P804
P802
P805
K
P501
P1303
P552
E40
F
P4206
D
P4003
G
H
J
A
C
P5401
B
P4002
P6501
P5301
P4007
P4004
P6002
P4001
P1201
P3001
P6201
E10
D6001
Sensor
LED
SW6002
Mode Select
SW.
E80
791
737
405
266
P8001
P8002
P8003
450
330
Tabs
Tabs
Tab
not supplied
S3
NOTE
The parts indicated by
S1, S2, S3... are for Ass'y
only and are not supplied.
H
G
F
E
D
C
B
A
1
2
3
4
5
6

NOTE 5: When replacing the DVD Frame (Ref. No. 317), be sure to place the Rating Label (Ref. No. 318) on it.

11.6. CHASSIS FRAME SECTION (3)

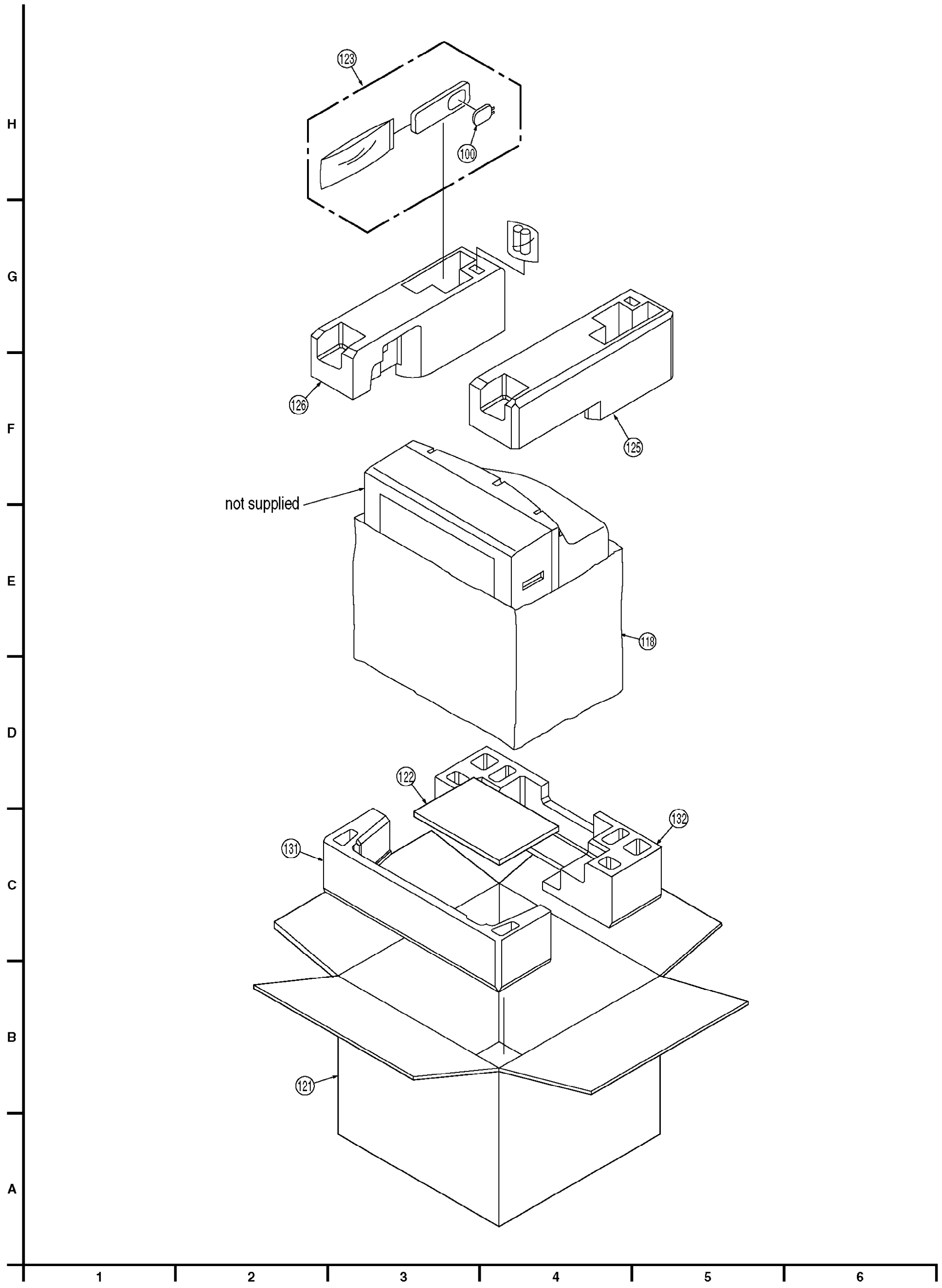
❻ CHASSIS FRAME SECTION (3)

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.


H
G
F
E
D
C
B
A
1
2
3
4
5
6
E10
E11
713
293
711
E30
762
488
IC351
153
E40
728
IC451
483
751
751
483
⚠IC801
293
741 ⚠
768
293
771
T551 ⚠
760
⚠Q551
487
484
712
470

11.7. PACKING PARTS AND ACCESSORIES SECTION

❼ PACKING PARTS AND ACCESSORIES SECTION


123
100
126
125
not supplied
118
122
132
131
121
H
G
F
E
D
C
B
A
1
2
3
4
5
6

12. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

12.1. REPLACEMENT NOTES

12.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use

only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. SPECIAL NOTE
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. Parts with mark “AVC” in Remarks column are supplied from AVC. Parts with mark “KENT” in Remarks column are supplied from KENT. Others are supplied from MKA.
7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.
8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

12.1.2. Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Unit (Ref. No. 11) and the Cassette Up Ass'y (Ref. No. 61).
   After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in MECHANICAL ADJUSTMENT procedures.

3. In early units, a washer is used.
   When servicing the washer or the P5 Arm Unit, replace only the P5 Arm Unit with a new one, and remove the washer.
4. Main Cam Gear is supplied as a Main Cam Gear Kit (Ref. No. 8) only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.
5. The Capstan Motor Ass'y (Ref. No. 46) is supplied as a unit only. However, the Flat Flexible Cable (Ref. No. 45) is available separately as a replacement part.
6. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.
7. Main Cam Push Nut (Ref. No. 414) is not reusable.
   If removed, install a new one.
8. When replacing the DVD Frame (Ref. No. 317), be sure to place the Rating Label (Ref. No. 318) on it.

12.1.3. Electrical Replacement Notes

1. Unless otherwise specified;
   All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.
2. Abbreviation

RTL:

Retention Time Limited
This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

NR:

Non Repairable Board Ass'y

MGF CHIP:

Metal Glaze Film Chip

C CHIP:

Ceramic Chip

COMPLX CMP:
Complex Component

W FLMPRF:
Wirewound Flameproof

C.B.A.:
Circuit Board Assembly

P.C.B.:
Printed Circuit Board

E.S.D.:
Electrostatically Sensitive Devices

3. When replacing 0 Ω resistor, a wire can be substituted for it.

4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/ VHF TUNER/TV DEMODULATORUNIT replacement part is available as a complete assembly unit only.

5. EEP ROM IC (IC8001), DVD Decoder C.B.A. replacement note: After replacing EEP ROM IC (IC8001) or DVD Decoder C.B.A., confirm the Firmware version of DVD using Self-Diagnostic function. If the version is different than that indicated on the Firmware Disc, update it using the Firmware Disc. Refer to “HOWTO UPDATE THE FIRMWARE OF DVD.“

12.2. MECHANICAL REPLACEMENT PARTS LIST

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	VBSS0033	FULL ERASE HEAD	1
2	LSXK0094	MOTOR BLOCK UNIT	1
3	LSDB0045	TENSION ARM BOSS	1
4	LSXY0281	MECHANICAL CHASSIS SUB ASS'Y	1,2
5	LSMD0209	OPENER PIECE	1
8	VVGS0009	MAIN CAM GEAR KIT	2
9	LSDR0004	S REEL TABLE	1
10	LSDR0005	T REEL TABLE	1
11	LSEG0030	CYLINDER UNIT	1
12	VEHS0587	AUDIO CONTROL/ERASE HEAD UNIT	1
14	LSDG0112	LIFT GEAR	1
16	VXDS0213	LOADING POST BASE-S UNIT	1
17	VXDS0214	LOADING POST BASE-T UNIT	1
18	LSXL0079	PINCH ARM UNIT	1
19	LSDG0110	INTERMEDIATE GEAR A	1
20	LSXL0078	P5 ARM UNIT	1
21	LSML0131	DRIVE RACK ARM	1
22	LSXL0077	TENSION CONTROL ARM UNIT	1
23	LSSC0518	A/C SHIELD PLATE	1
27	VXLS1130	T BRAKE UNIT	1
29	VXLS1129	TENSION ARM UNIT	1
38	LSMB0221	CASSETTE DOOR SPRING	4
41	VXPS0389	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	LSDG0114	CHANGING GEAR	2
44	VXLS1091	IDLER ARM UNIT	2
45	LSJW0027	FLAT FLEXIBLE CABLE W/OUT PLUG,12V DC	2
46	LSEM0056	CAPSTAN MOTOR ASS'Y	2
47	LSMM0003	MAIN ROD	2
48	LXQVB1202F3	COLOR PICTURE TUBE UNIT	4 ⚠
49	VXLS1099	S LOADING ARM UNIT	2
50	VXLS1098	T LOADING ARM UNIT	2
51	LSDG0116	REEL GEAR	2
52	LSDG0111	INTERMEDIATE GEAR B	2
53	LSMA0532	SUPPORT ANGLE	2
54	LSDV0009	CAPSTAN BELT SQUARE,ELASTOMER 2MM	2
58	LSXL0087	SS BRAKE ARM UNIT	2
59	LSMB0196	SS BRAKE SPRING	2
60	VMFS0311	CUSHION	5
61	VXYS1347	CASSETTE UP ASS'Y	3,5
62	LSMA0352	TOP PLATE	3
64	LSMD0174	SIDE PLATE L	3
65	LSMD0173	SIDE PLATE R	3
66	LSMB0218	SUPPORT SPRING	3
67	LSML0096	OPENER LEVER	3
68	VXLS1111	DRIVE RACK UNIT	3
69	VXAS4423	HOLDER UNIT	3
70	VXLS1110	WIPER ARM UNIT	3
71	LXQKY1202F3	FRONT CABINET ASS'Y	4
72	LXQKF01272F	CASSETTE DOOR-LID UNIT	4
73	LXQKV1202F3	REAR COVER UNIT	4
84	LSGU0260	OPERATION BUTTON A	4
90	TBMA003	BADGE,ABS RESIN	4
91	LXQUS1202F3	TOP SHIELD PLATE ASS'Y	5

Ref. No.	Part No.	Part Name & Description	Remarks
92	LXQAS01200FU	SPEAKER UNIT R	4
93	LXQAS02200FU	SPEAKER UNIT L	4
100	VKFS2235	BATTERY COVER	7
118	LPE64005A	BAG,POLYETHYLENE	7
121	LSPG1332	PACKING CASE,PAPER	7
122	LSQT0521A	INSTRUCTION BOOK	7
123	LSSQ0302	INFRARED REMOTE CONTROL UNIT	7
125	LSPN0181	TOP CUSHION RIGHT,STYROFOAM	7
126	LSPN0180	TOP CUSHION LEFT,STYROFOAM	7
131	LSPN0178	BOTTOM CUSHION FRONT,STYROFOAM	7
132	LSPN0179	BOTTOM CUSHION REAR,STYROFOAM	7
153	TMM7443-1	CLAMPER	6
157	TMM77409	PURSE LOCK CLAMPER	4
200	LSGL0341	PANEL LIGHT	4
201	LSGU0261	OPERATION BUTTON B	4
202	LXQKF02272F	DVD DISK DOOR-LID UNIT	4
203	LSMB0170	DVD CASSETTE DOOR SPRING	4
204	LSMA0438	MOUNT PLATE,STEEL	5
208	TMK77708	CUSHION,RUBBER	4
209	VMFS0213	SHEET,NYLON+RAYON	4
215	LSQL1180	DOLBY DIGITAL CAUTION LABEL	4
230	LSKF0325	TRAY COVER	5
242	LSXK0088	DVD UNIT	5
265	VEKS5797	CONNECTOR CABLE W/PLUG,0V	5
266	VEKS5811	GROUNDING WIRE	5
267	VEKS5712	FM RADIO ANTENNA CORD,0V	5
272	TMM77412	CLAMPER	5
277	KGLS-3S	CLAMPER	5
293	TMM76455	PURSE LOCK CLAMPER	6
316	LSXA0415	LOWER SHIELD ASS'Y	5
317	LMMK0201	FRAME	5
318	LSQL1260	RATING LABEL	5
328	VEKS5878	CONNECTOR CABLE W/PLUG,AC 18V	5
330	LSUC0010	DVD BLOCK	5 KENT
401	VHDS0475	SCREW,STEEL	1
405	VHDS0496	SCREW W/WASHER,STEEL	5
410	VHDS0498	SCREW W/WASHER,STEEL	1
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	2
422	XWGV2D5G	WASHER,NYLON	2
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
443	XTV4+12A	TAPPING SCREW,STEEL	4
445	LHT60002Y	SCREW,STEEL	4
446	XTV4+16A	TAPPING SCREW,STEEL	4
449	VHDS0493	TAPPING SCREW,STEEL	5
450	VHDS0309	SCREW,STEEL	5
458	XTV3+8J	TAPPING SCREW,STEEL	1
460	XTN4+12A	TAPPING SCREW,STEEL	5
469	XSN3+6	SCREW,STEEL	5
470	XTV3+10G	TAPPING SCREW,STEEL	4,6
473	XYN26+C6	SCREW W/WASHER,STEEL	1
475	XTV26+5FJ	TAPPING SCREW,STEEL	2
478	VHDS0495	SCREW,STEEL	2
481	XTW4+Z15D	TAPPING SCREW,STEEL	4
483	XYN3+F10S	SCREW W/WASHER,STEEL	5,6

Ref. No.	Part No.	Part Name & Description	Remarks
484	XTW3+10J	TAPPING SCREW,STEEL	5,6
487	XYN3+J8	SCREW W/WASHER,STEEL	6
488	XYN3+F6S	SCREW W/WASHER,STEEL	6
492	VHDS0274	TAPPING SCREW,STEEL	5
508	XTB26+6J	TAPPING SCREW,STEEL	2
511	XYC26+CF8	SCREW W/WASHER,STEEL	5
711	PNA4611M00HC	INFRARED RECEIVER UNIT	6
712	VMTS0035	CUSHION,RUBBER	1,5,6
713	VMAS1912	P.C.B. SUPPORT ANGLE	6
728	LUS63008A	HEAT SINK	6
737	VEKS5836	CONNECTOR CABLE W/PLUG,0V	5
741	LSJA0343	AC CORD W/PLUG,120V	6 ⚠
741	LSJA0362	AC CORD W/PLUG,120V	6 ⚠
741	LSJA0364	AC CORD W/PLUG,120V	6 ⚠
743	ENG36709GL	TUNER,UHF/VHF NR	5
751	LML69001A	ANODE LEAD CLAMPER	6
753	LSSC0256	HEAT SINK	5
760	TUC77628	HEAT SINK	6
762	TUC76649-4	HEAT SINK	6
768	TUC77603-1	HEAT SINK	6
771	EYF52BC	FUSE HOLDER	5,6
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	5
796	LSEQ0647	SHIELD PLATE UNIT	5
E10	LSEP2064A	MAIN C.B.A.	5,6 RTL
E11	VEPS4038B	AUDIO C.B.A.	6 RTL
E20	LSEP2010A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	1 RTL
E30	LRP63013F	CRT C.B.A.	5,6 RTL
E40	LSEP2065A	TV MAIN C.B.A.	5,6 RTL
E50	LSEP2066A	POWER SUPPLY C.B.A.	5 RTL
E60	VEPS4039A	AUDIO AMP C.B.A.	5 RTL
E70	LSEP2069A	OPERATION C.B.A.	5 RTL
E80	LSEP2007B	DVD DECODER C.B.A.	5 RTL

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	DVDT-S01	DVD TEST DISC	AVC
	LSUA0034	EXTENSION CABLE	

12.3. ELECTRICAL REPLACEMENT PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP2064A	MAIN C.B.A.	E.S.D. RTL
E11	VEPS4038B	AUDIO C.B.A.	RTL
E20	LSEP2010A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL
E30	LRP63013F	CRT C.B.A.	RTL
E40	LSEP2065A	TV MAIN C.B.A.	RTL
E50	LSEP2066A	POWER SUPPLY C.B.A.	RTL
E60	VEPS4039A	AUDIO AMP C.B.A.	RTL
E70	LSEP2069A	OPERATION C.B.A.	RTL
E80	LSEP2007B	DVD DECODER C.B.A.	E.S.D. RTL

12.3.1. MAIN C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC3001	AN3479FBP-A	IC, LINEAR	
IC3201	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC8632165S53	IC, 8BIT MICROCONTROLLER	E.S.D.
IC3302	C1AB00000402	IC, LINEAR	
IC5101	MN82840	IC, LOGIC(OTHER)	E.S.D.
IC5301	AN5368FB	IC, LINEAR	
IC5302	C1AB00001518	IC, LINEAR	
IC5302	C1AB00000399	IC, LINEAR	
IC5351	C1AB00001518	IC, LINEAR	
IC5351	C1AB00000399	IC, LINEAR	
IC5361	C1AB00000402	IC, LINEAR	
IC6001	MN101D06GCP	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPUTER	
IC6003	B3NAA0000049	PHOTO INTERRUPUTER	
IC6004	LSSK0010	IC, 1K EEP ROM	E.S.D.
IC6005	C0EBJ0000080	IC, CMOS STANDARD LOGIC	E.S.D.
IC6005	C0EBJ0000099	IC, CMOS STADNARD LOGIC	E.S.D.
IC6005	RN5VS47CA-TR	IC, CMOS STANDARD LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q3001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q3001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q3002	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3002	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3004	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q3004	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q3301	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q3301	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q3305	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q3305	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4001	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q4001	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q4002	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4003	2SD1819A-RS	TRANSISTOR SI NPN CHIP	
Q4101	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4101	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4171	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q4171	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5101	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5101	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5104	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5104	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5105	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5105	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5107	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5107	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5108	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5108	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5110	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5110	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5114	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5114	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5118	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5118	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5119	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5119	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5120	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5120	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5121	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5121	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5125	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5125	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5151	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5151	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5152	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5152	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5301	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q5301	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q5302	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q5302	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q5901	2SD225900A	TRANSISTOR SI NPN	
Q5901	2SD1858-RTV2	TRANSISTOR SI NPN	
Q6001	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6001	B1ADCF000001	TRANSISTOR SI PNP CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q6002	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6002	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6003	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6004	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6005	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6006	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6006	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6009	VEKS5707	PHOTO SENSOR UNIT	
Q6010	VEKS5707	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4171	MA2C165001VT	DIODE SI	
D4171	B0AACK000004	DIODE SI	
D4171	1SS119	DIODE SI	
D5304	MA2C165001VT	DIODE SI	
D5304	B0AACK000004	DIODE SI	
D5304	1SS119	DIODE SI	
D5501	MA4062-L	DIODE ZENER 6.2V	⚠
D6001	VEKS5708	SENSOR LED UNIT	
D6003	MA2C165001VT	DIODE SI	
D6003	B0AACK000004	DIODE SI	
D6003	1SS119	DIODE SI	
D6005	MA2C165001VT	DIODE SI	
D6005	B0AACK000004	DIODE SI	
D6005	1SS119	DIODE SI	
D6301	B3AAA0000538	LED RED	
D6302	B3AAA0000538	LED RED	
D6303	B3ABA0000400	LED GREEN	
D6304	B3ACA0000192	LED ORANGE	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3001	ERDS2TJ101	CARBON 1/4W 100	
R3006	ERDS2TJ101	CARBON 1/4W 100	
R3010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3016	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3017	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3024	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R3025	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3026	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3028	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R3029	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R3032	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3037	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3038	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3076	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3077	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3078	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3080	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3083	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3084	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3301	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R3302	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3303	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3304	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3305	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3308	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3309	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3310	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R3312	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3313	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R3314	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3315	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R3316	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3318	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3319	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3320	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3321	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3324	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3325	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3326	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3327	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R3331	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3332	J0JBC0000022	BEAD INDUCTOR CHIP	
R3333	J0JBC0000022	BEAD INDUCTOR CHIP	
R3334	J0JBC0000022	BEAD INDUCTOR CHIP	
R3341	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3343	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R3344	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3345	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3346	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3347	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3349	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4009	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4031	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4032	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4051	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4052	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4101	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R4102	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4172	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4175	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5102	ERJ6GEYJ470V	MGF CHIP 1/10W 47	
R5103	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5104	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5106	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5107	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R5108	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5112	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5113	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5118	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5121	ERJ6GEYJ301V	MGF CHIP 1/10W 300	
R5122	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5124	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5127	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R5128	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R5130	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5132	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5133	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5134	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5135	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5136	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5138	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5142	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5143	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R5144	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5145	ERJ6ENF2200V	MGF CHIP 1/10W 220	
R5146	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5147	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5148	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R5150	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5152	ERJ6GEYJ680V	MGF CHIP 1/10W 68	

Ref. No.	Part No.	Part Name & Description	Remarks
R5153	ERJ6ENF2201V	MGF CHIP 1/10W 2.2K	
R5154	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5158	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5159	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5160	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5161	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5162	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5164	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R5165	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5166	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5167	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R5169	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R5170	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5171	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5172	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5174	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5178	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5179	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5180	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R5181	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R5182	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5183	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R5184	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5185	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5194	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R5195	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5196	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5197	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5198	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5301	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5302	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R5304	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5305	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R5306	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5307	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5308	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R5309	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R5311	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5312	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5313	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R5314	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5315	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5316	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5317	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5318	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5320	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R5324	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5351	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5361	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5401	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5402	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5403	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R5405	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	

Ref. No.	Part No.	Part Name & Description	Remarks
R5406	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5407	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R5502	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R5503	ERDS2TJ471	CARBON 1/4W 470	
R5504	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5505	ERJ6ENF3241V	MGF CHIP 1/10W 3.24K	⚠
R5506	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R5508	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R5509	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5510	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5511	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R5512	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R5513	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5515	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R5604	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R5902	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R5932	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R5933	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6002	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6005	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6007	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6008	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6011	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R6012	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R6013	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6015	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6016	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6017	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6018	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6019	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6020	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6022	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6023	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6024	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6027	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6029	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6030	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6032	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6041	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6044	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6045	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6046	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6049	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6050	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6052	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6053	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6054	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6055	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6056	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6060	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6061	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6062	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6063	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6064	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6066	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6067	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6081	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6090	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R6091	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6092	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6093	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6094	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6098	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6099	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6100	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6113	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6114	ERJ6GEYJ272V	MGF CHIP 1/10W 2.7K	
R6115	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6116	ERDS2TJ101	CARBON 1/4W 100	
R6118	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6119	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6120	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6121	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6122	ERJ6GEYJ181V	MGF CHIP 1/10W 180	
R6123	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6124	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6126	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6127	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6130	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6131	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R6132	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6133	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6134	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6135	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6136	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6137	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6138	ERDS2TJ560T	CARBON 1/4W 56	

Ref. No.	Part No.	Part Name & Description	Remarks
R6143	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6144	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6149	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R6150	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R6160	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6161	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6162	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6163	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6164	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6165	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6166	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6167	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6170	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6171	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6175	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6201	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6203	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6207	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6208	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6209	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6210	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6211	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6212	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R6301	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6303	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6304	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6305	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6306	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6307	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R6308	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6309	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R6311	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6312	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C3002	ECJ2VC1H020C	C CHIP 50V 2P	
C3003	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3004	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3006	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3007	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3008	ECJ2VC1H181J	C CHIP 50V 180PF	
C3009	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C3010	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3013	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3015	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3016	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C3018	ECEA0JKS101	ELECTROLYTIC 6.3V 100UF	
C3019	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3020	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C3021	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3022	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C3023	ECJ2VC1H680J	C CHIP 50V 68PF	
C3024	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3025	ECJ2VB1C104K	C CHIP 16V 0.1UF	
C3026	ECJ2VB1H822K	C CHIP 50V 8200PF	
C3027	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3028	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3030	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3031	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3032	ECJ2VF1C474Z	C CHIP 16V 0.47UF	
C3034	ECJ2VC1H181J	C CHIP 50V 180PF	
C3035	ECJ2VC1H330J	C CHIP 50V 33PF	
C3036	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3037	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3038	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3041	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3043	ECJ2VB1H392K	C CHIP 50V 3900PF	
C3044	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3045	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C3046	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3047	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C3048	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3050	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3055	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3056	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3057	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3058	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3083	ECJ2VB1H152K	C CHIP 50V 1500PF	
C3084	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3231	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C3232	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3234	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3235	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3236	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3237	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3303	ECJ2VC1H220J	C CHIP 50V 22PF	
C3304	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3305	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3306	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3307	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3308	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3309	ECJ2VC1H220J	C CHIP 50V 22PF	
C3310	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3311	ECJ2VC1H180J	C CHIP 50V 18PF	
C3313	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3315	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3316	ECJ2VB1H333K	C CHIP 50V 0.033UF	
C3317	ECEA1HKS010	ELECTROLYTIC 50V 1UF	
C4001	ECJ2VF1C224Z	C CHIP 16V 0.22UF	
C4002	ECEA1HKS010	ELECTROLYTIC 50V 1UF	
C4003	ECJ2VB1H272K	C CHIP 50V 2700PF	
C4004	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4005	ECEA0JKS220	ELECTROLYTIC 6.3V 22UF	
C4006	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4010	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C4011	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4051	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C4102	ECQB1562JF3	POLYESTER 100V 5600PF	
C4103	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4104	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C4105	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4171	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5101	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5102	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5103	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5104	ECJ2VC1H220J	C CHIP 50V 22PF	
C5106	ECJ2VC1H181J	C CHIP 50V 180PF	
C5109	ECJ2VC1H121J	C CHIP 50V 120PF	
C5110	ECJ2VC1H150J	C CHIP 50V 15PF	
C5111	ECJ2VC1H181J	C CHIP 50V 180PF	
C5112	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5113	ECJ2VC1H680J	C CHIP 50V 68PF	
C5114	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5115	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C5116	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5117	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5118	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5119	ECJ2VC1H270J	C CHIP 50V 27PF	
C5120	ECJ2VC1H270J	C CHIP 50V 27PF	
C5121	ECJ2VC1H470J	C CHIP 50V 47P	
C5122	ECEA1EKA100I	ELECTROLYTIC 25V 10UF	
C5123	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5124	ECJ2VC1H221J	C CHIP 50V 220P	
C5125	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5126	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5127	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5129	ECJ2VF1H103Z	C CHIP 50V 0.01UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C5130	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C5131	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5132	ECEA1HKN010I	ELECTROLYTIC 50V 1UF	
C5133	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5134	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5140	ECJ2VC1H150J	C CHIP 50V 15PF	
C5141	ECJ2VC1H680J	C CHIP 50V 68PF	
C5142	ECJ2VC1H121J	C CHIP 50V 120PF	
C5143	ECJ2VC1H181J	C CHIP 50V 180PF	
C5151	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5301	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C5302	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C5303	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C5305	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5306	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5307	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5308	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5310	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5311	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5312	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5351	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5352	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5353	ECJ2VC1H220J	C CHIP 50V 22PF	
C5354	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5361	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5362	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5363	ECJ2VC1H220J	C CHIP 50V 22PF	
C5364	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5401	VCUSTBC224KB	C CHIP 16V 0.22UF	
C5402	ECJ2VB1H222K	C CHIP 50V 2200PF	
C5403	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C5501	ECJ2VB1E183K	C CHIP 25V 0.018UF	
C5502	ECJ2VB1H681K	C CHIP 50V 680PF	
C5505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5506	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5507	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C5508	ECUV1H221JSN	C CHIP 50V 220PF	
C5510	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5511	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5516	ECJ2VB1E333K	C CHIP 25V 0.033UF	
C5601	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5602	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C5603	ECJ2VC1H150J	C CHIP 50V 15PF	
C5604	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C5605	ECJ2VB1E153K	C CHIP 25V 0.015UF	
C5902	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5903	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C5904	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5905	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5906	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C5932	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C6001	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6002	ECJ2VC1H080C	C CHIP 50V 8PF	
C6003	ECJ2VC1H100C	C CHIP 50V 10PF	

Ref. No.	Part No.	Part Name & Description	Remarks
C6004	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C6006	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6009	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6013	ECJ2VC1H101J	C CHIP 50V 100PF	
C6017	ECJ2VC1H101J	C CHIP 50V 100PF	
C6018	ECJ2VC1H101J	C CHIP 50V 100PF	
C6020	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6021	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6029	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6040	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6041	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6044	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C6201	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6202	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6203	ECJ2VB1H332K	C CHIP 50V 3300PF	
C6204	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6207	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6208	ECEA1CKS100	ELECTROLYTIC 16V 10UF	
C6209	ECJ2VB1H102K	C CHIP 50V 1000PF	
C6212	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6213	ECEA0JKS331I	ELECTROLYTIC 6.3V 330UF	
C6214	ECEA0JKS220	ELECTROLYTIC 6.3V 22UF	
C6215	ECJ2VB1H272K	C CHIP 50V 2700PF	
C6216	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C6220	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C6221	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6302	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6401	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C6402	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6403	ECEA1HKS010	ELECTROLYTIC 50V 1UF	
C6404	ECJ2VC1H121J	C CHIP 50V 120PF	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4051	VLFS0014	FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3001	G0C390KA0045	COIL 39UH	
L3002	VLQSAB7D101K	COIL 100UH	
L3005	G0C330KA0045	COIL 33UH	
L3010	VLQSAB7D470K	COIL 47UH	
L3231	ELESN221KA	COIL 220UH	
L4001	G0C153K00003	COIL 15MH	
L4002	ELESN101KA	COIL 100UH	
L4004	G0C100KA0045	COIL 10UH	
L4101	ELESN471KA	COIL 470UH	
L5101	ELESN150KA	COIL 15UH	
L5102	ELESN330KA	COIL 33UH	
L5103	ELESN1R5KA	COIL 1.5UH	
L5105	ELESN4R7KA	COIL 4.7UH	
L5107	ELESN470KA	COIL 47UH	
L5109	ELESN101KA	COIL 100UH	
L5110	ELESN6R8KA	COIL 6.8UH	
L5111	ELESN150KA	COIL 15UH	
L5112	G0ZZ00001933	COIL	
L5114	ELESN4R7KA	COIL 4.7UH	
L5115	ELESN6R8KA	COIL 6.8UH	
L5116	ELESN150KA	COIL 15UH	
L5301	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L5302	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L5303	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
L5901	ELESN101KA	COIL 100UH	
L6201	ELEXT101KE04	COIL 100UH	
L6401	ELEXT101KE04	COIL 100UH	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3001	VSXS0195	CRYSTAL OSCILLATOR	
X3301	VSXS0238	CRYSTAL OSCILLATOR	
X5501	H2A503300012	CRYSTAL OSCILLATOR	
X5601	VSXS0208-A	CRYSTAL OSCILLATOR	
X6001	VSXS0784	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1201	K1KA13A00089	CONNECTOR 13P	
P3001	K1KA15A00104	CONNECTOR 15P	
P4001	VJSS0888	FE CONNECTOR 2P	
P4002	LSJWM6N120CL	PARALLEL CONNECTOR	
P4004	VJSS0875	CONNECTOR RECEPTACLE 13P	
P4005	VJSS0876	CONNECTOR RECEPTACLE 19P	
P4007	K1KB19A00007	CONNECTOR 19P	
P5301	K1MP04A00006	WIRE TRAP	
P5401	K1KB19A00007	CONNECTOR 19P	
P6001	K1KA05A00268	CONNECTOR 5P	
P6002	VJSS0875	CONNECTOR RECEPTACLE 13P	
P6201	K1KA12A00234	PIN HEADER	
P6501	VJSS0874	CONNECTOR 11P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	LSSH0002	LEAF SWITCH-SAFETY TAB	
SW6002	LSSS0008	MODE SWITCH	
SW6301	EVQ21405R	PUSH SWITCH	
SW6302	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6304	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	
SW6307	EVQ21405R	PUSH SWITCH	
SW6308	EVQ21405R	PUSH SWITCH	
SW6309	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	
SW6312	EVQ21405R	PUSH SWITCH	
SW6315	EVQ21405R	PUSH SWITCH	
SW6316	EVQ21405R	PUSH SWITCH	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T4101	VLTS0304	TRANSFORMER	

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E11	VEPS4038B	AUDIO C.B.A.	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
293	TMM76455	PURSE LOCK CLAMPER	
711	PNA4611M00HC	INFRARED RECEIVER UNIT	
712	VMTS0035	CUSHION,RUBBER	

12.3.2. AUDIO C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC4201	AN3962FB-V	IC, LINEAR	
IC4301	C0JBAR000292	IC, CMOS STANDARD LOGIC	E.S.D.
IC4301	CD4053BCM	IC, MOS LOGIC SWITCHING	E.S.D.
IC4302	C1BB00000177	IC, LINEAR	
IC4302	C0ABBB000017	IC, LINEAR	
IC4601	BD3867S	IC, LOGIC(OTHER)	E.S.D.
IC9001	CXA2064M	IC, LINEAR	
IC9201	AN7420-NT	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4301	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4301	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4302	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q4302	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4303	UNR221200L	TRANSISTOR SI NPN CHIP	
Q4303	B1GBCFLL0002	TRANSISTOR SI NPN CHIP	
Q4304	UNR211L00L	TRANSISTOR SI PNP CHIP	
Q4305	UNR221L00L	TRANSISTOR SI PNP CHIP	
Q9001	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q9001	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q9002	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q9002	B1ABCF000011	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4301	MA2C165001VT	DIODE SI	
D4301	B0AACK000004	DIODE SI	
D4301	1SS119	DIODE SI	
D4302	MA4120N-M	DIODE ZENER 12V	
D4303	MA2C165001VT	DIODE SI	
D4303	B0AACK000004	DIODE SI	
D4303	1SS119	DIODE SI	
D9001	MA2C165001VT	DIODE SI	
D9001	B0AACK000004	DIODE SI	
D9001	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4205	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4206	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4207	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4208	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4209	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4210	ERA6YEB153V	MGF CHIP1/10W 15K	
R4211	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4212	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4213	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4214	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4215	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4216	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4217	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4218	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4219	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4220	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4221	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4222	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4223	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4228	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R4229	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4230	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4231	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4232	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4233	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R4234	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4235	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R4236	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4237	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4302	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4303	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4304	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4305	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4306	ERDS2TJ101	CARBON 1/4W 100	
R4307	ERDS2TJ101	CARBON 1/4W 100	
R4308	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4309	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4310	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4311	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4312	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4313	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4314	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4315	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4316	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4317	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4318	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4319	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4320	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4321	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4601	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R4602	ERJ6GEYJ394V	MGF CHIP 1/10W 390K	
R4603	ERDS2TJ472	CARBON 1/4W 4.7K	
R4604	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4605	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4606	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4607	ERDS2TJ101	CARBON 1/4W 100	
R4608	ERDS2TJ101	CARBON 1/4W 100	
R4611	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4612	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4613	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4614	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9001	EVNCYAA03B14	VARIABLE 10K	
R9002	ERJ6GEYG683V	MGF CHIP 1/10W 68K	
R9003	EVNDCAA03B14	VARIABLE 10K	
R9004	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R9005	ERJ6GEYJ105V	MGF CHIP 1/10W 1M	
R9006	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R9007	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9008	EVMAASA00B53	VARIABLE 5K	
R9009	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R9010	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R9017	**ERJ6GEYJ821V**	**MGF CHIP 1/10W 820**	
R9018	**ERJ6GEYJ102V**	**MGF CHIP 1/10W 1K**	
R9201	**ERJ6GEYJ102V**	**MGF CHIP 1/10W 1K**	
R9202	**ERJ6GEYJ103V**	**MGF CHIP 1/10W 10K**	
R9203	**ERJ6GEYJ102V**	**MGF CHIP 1/10W 1K**	
R9204	**ERJ6GEYJ224V**	**MGF CHIP 1/10W 220K**	
R9205	**ERJ6GEYJ332V**	**MGF CHIP 1/10W 3.3K**	
R9206	**EVMAASA00B53**	**VARIABLE 5K**	
R9207	**ERJ6GEYJ332V**	**MGF CHIP 1/10W 3.3K**	
R9208	**ERDS2TJ392**	**CARBON 1/4W 3.9K**	
R9209	**ERJ6GEYJ272V**	**MGF CHIP 1/10W 2.7K**	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4201	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4202	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4203	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4204	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4205	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4206	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4207	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4208	**ECJ2VF1E104Z**	**C CHIP 25V 0.1UF**	
C4209	**ECJ2VF1E104Z**	**C CHIP 25V 0.1UF**	
C4210	**ECEA0JKA330I**	**ELECTROLYTIC 6.3V 33UF**	
C4211	**ECEA0JKA330I**	**ELECTROLYTIC 6.3V 33UF**	
C4212	**ECJ2VB1H473K**	**C CHIP 50V 0.047UF**	
C4213	**ECJ2VB1H473K**	**C CHIP 50V 0.047UF**	
C4214	**ECEA1HKA2R2**	**ELECTROLYTIC 50V 2.2UF**	
C4215	**ECEA1HKA2R2**	**ELECTROLYTIC 50V 2.2UF**	
C4216	**ECEA0JKA101**	**ELECTROLYTIC 6.3V 100UF**	
C4217	**ECEA0JKA101**	**ELECTROLYTIC 6.3V 100UF**	
C4218	**ECJ2VB1H153K**	**C CHIP 50V 0.015UF**	
C4219	**ECJ2VB1H153K**	**C CHIP 50V 0.015UF**	
C4220	**ECJ2VB1H103K**	**C CHIP 50V 0.01UF**	
C4221	**ECJ2VB1H103K**	**C CHIP 50V 0.01UF**	
C4223	**ECJ2VF1H103Z**	**C CHIP 50V 0.01UF**	
C4224	**ECJ2VF1C224Z**	**C CHIP 16V 0.22UF**	
C4225	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4226	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4227	**ECJ2VF1E104Z**	**C CHIP 25V 0.1UF**	
C4228	**ECEA0JKA470**	**ELECTROLYTIC 6.3V 47UF**	
C4229	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4230	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4232	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4233	**ECEA1HKA010**	**ELECTROLYTIC 50V 1UF**	
C4301	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4302	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4303	**ECJ2VF1H103Z**	**C CHIP 50V 0.01UF**	
C4304	**ECJ2VF1H103Z**	**C CHIP 50V 0.01UF**	
C4305	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4306	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4307	**ECEA1CKA100**	**ELECTROLYTIC 16V 10UF**	
C4308	**ECJ2VF1H103Z**	**C CHIP 50V 0.01UF**	

Ref. No.	Part No.	Part Name & Description	Remarks
C4309	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4310	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4311	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4312	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4313	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4601	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4602	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4603	ECJ2VB1E683K	C CHIP 25V 0.068UF	
C4604	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4605	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4606	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4612	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4616	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C4617	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C4618	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4619	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4620	ECJ2VB1E683K	C CHIP 25V 0.068UF	
C4621	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4622	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4623	ECA1CM471B	ELECTROLYTIC 16V 470UF	
C9001	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C9002	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C9003	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C9004	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C9005	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9006	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C9007	ECJ2VB1H562K	C CHIP 50V 5600PF	
C9008	ECJ2VB1E123K	C CHIP 25V 0.012UF	
C9009	ECEA1EKN4R7I	ELECTROLYTIC 25V 4.7UF	
C9010	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C9011	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9012	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9013	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9014	ECEA1EKN4R7I	ELECTROLYTIC 25V 4.7UF	
C9015	ECEA1HKA3R3I	ELECTROLYTIC 50V 3.3UF	
C9016	ECEA1EKN4R7I	ELECTROLYTIC 25V 4.7UF	
C9017	ECJ2VB1E473K	C CHIP 25V 0.047UF	
C9018	ECJ2VB1H272K	C CHIP 50V 2700PF	
C9019	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9020	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C9201	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9202	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C9203	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9204	ECQP1H102JZ3	POLYESTER 50V 1000PF	
C9205	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C9206	ECEA1HKA3R3I	ELECTROLYTIC 50V 3.3UF	
C9207	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C9208	ECJ2VB1H223K	C CHIP 50V 0.022UF	
C9209	ECJ2VB1H223K	C CHIP 50V 0.022UF	
C9210	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C9211	ECEA1HKA010	ELECTROLYTIC 50V 1UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L4601	ELEXT101KE04	COIL 100UH	
L9001	ELESN101KA	COIL 100UH	
L9201	ELESN101KA	COIL 100UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4003	VEKS5831	CONNECTOR CABLE W/PLUG,5V	
P4201	VJHS0293	PACK PIN 3P	
P4202	VJHS0299	PACK PIN 9P	
P4203	VJHS0290	PACK PIN 10P	
P4204	VJHS0290	PACK PIN 10P	
P4205	VJHS0295	PACK PIN 5P	
P4206	VEKS5820	CONNECTOR CABLE W/PLUG,5V	
P4207	VJHS0296	PIN HEADER 6P	
P4210	VJHS0294	PIN HEADER 4P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
713	VMAS1912	P.C.B. SUPPORT ANGLE	

12.3.3. Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC3501	AN3361SB	IC, LINEAR	
IC4401	AN3328S	IC, LINEAR	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4408	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4410	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4411	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C3504	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3506	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3507	ECJ2VB1H102K	C CHIP 50V 1000PF	
C3508	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3511	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3512	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3513	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3519	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3520	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3523	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3524	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3528	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3529	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C3532	ECJ2VF1E104Z	C CHIP 25V 0.1UF	
C3533	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4401	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4402	ECJ2VB1H102K	C CHIP 50V 1000PF	
C4405	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4406	ECJ2VB1H472K	C CHIP 50V 4700PF	
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4409	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4411	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
C4412	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C4413	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C4414	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	G0C101KA0045	COIL 100UH	
L4401	G0C101KA0045	COIL 100UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	K1KB15B00019	CONNECTOR 15P	

12.3.4. CRT C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC351	TDA6103Q	IC, LINEAR	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D352	B0AAGP000004	DIODE SI	
D353	B0AAGP000004	DIODE SI	
D354	B0AAGP000004	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R354	ERD25TJ272	CARBON 1/4W 2.7K	
R355	ERD25TJ272	CARBON 1/4W 2.7K	
R356	ERD25TJ272	CARBON 1/4W 2.7K	
R357	ERG1SJ104P	METAL OXIDE 1W 100K	
R359	ERG1SJ104P	METAL OXIDE 1W 100K	
R361	ERG1SJ104P	METAL OXIDE 1W 100K	
R363	ERDS2TJ102	CARBON 1/4W 1K	
R364	ERDS2TJ102	CARBON 1/4W 1K	
R365	ERDS2TJ102	CARBON 1/4W 1K	
R366	ERDS2TJ102	CARBON 1/4W 1K	
R367	ERDS2TJ102	CARBON 1/4W 1K	
R368	ERDS2TJ102	CARBON 1/4W 1K	
R369	ERDS2TJ222	CARBON 1/4W 2.2K	
R370	ERDS2TJ222	CARBON 1/4W 2.2K	
R371	ERDS2TJ222	CARBON 1/4W 2.2K	
R372	ERDS2TJ222	CARBON 1/4W 2.2K	
R373	ERDS2TJ222	CARBON 1/4W 2.2K	
R374	ERDS2TJ222	CARBON 1/4W 2.2K	
R375	ERDS2TJ102	CARBON 1/4W 1K	
R376	ERDS2TJ473	CARBON 1/4W 47K	
R377	ERDS2TJ103	CARBON 1/4W 10K	
R378	ERDS2TJ104	CARBON 1/4W 100K	
R379	ERDS2TJ124	CARBON 1/4W 120K	
R380	ERDS2TJ472	CARBON 1/4W 4.7K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C354	F1B3D1020008	CERAMIC 2KV 1000PF	
C364	ECEA1HKAR22	ELECTROLYTIC 50V 0.22UF	
C365	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C366	ECA2EM4R7B	ELECTROLYTIC 250V 4.7UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P351	VJWS4MS400AC	PARALLEL CONNECTOR 4P	
P352	VJWS4NS400AC	PARALLEL CONNECTOR 4P	
P353	K3B10CA00040	CRT SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
153	TMM7443-1	CLAMPER	
488	XYN3+F6S	SCREW W/WASHER,STEEL	
762	TUC76649-4	HEAT SINK	

12.3.5. TV MAIN C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC451	C1AA00000024	IC, LINEAR	
IC501	0N3131-R.KT	IC, LINEAR	⚠
IC501	PS2501-1-X	IC, LINEAR	⚠
IC501	0N3131-S.KT	IC, LINEAR	⚠
IC502	0N3131-R.KT	IC, LINEAR	⚠
IC801	C5HABZZ00051	IC, LINEAR	⚠
IC1301	0N3131-R.KT	IC, LINEAR	⚠
IC1301	0N3131-S.KT	IC, LINEAR	⚠
IC1302	TA76431ASTP6	IC, LINEAR	
IC1302	B1AZKD000001	IC, LINEAR	
IC1302	C0DAEMZ00001	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q431	2SA733-TQ	TRANSISTOR SI PNP	
Q431	2SA1175	TRANSISTOR SI PNP	
Q431	2SA1175-TH	TRANSISTOR SI PNP	
Q501	B1AACN000013	TRANSISTOR SI NPN	
Q531	2SA733-TQ	TRANSISTOR SI PNP	
Q531	2SA1175	TRANSISTOR SI PNP	
Q531	2SA1175-TH	TRANSISTOR SI PNP	
Q532	2SC945A-TQ	TRANSISTOR SI NPN	
Q532	2SC2785-TH	TRANSISTOR SI NPN	
Q532	2SC2785-TJ	TRANSISTOR SI NPN	
Q551	2SD2578-RG	TRANSISTOR SI NPN	⚠
Q571	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q571	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q581	B1ACBM000001	TRANSISTOR SI NPN	
Q581	2SA1767-Q	TRANSISTOR SI NPN	
Q581	2SB1221-Q	TRANSISTOR SI NPN	
Q801	2SC945A-TKA	TRANSISTOR SI NPN	
Q801	2SC1684-Q	TRANSISTOR SI NPN	
Q801	2SC1684-R	TRANSISTOR SI NPN	
Q801	2SC1684-S	TRANSISTOR SI NPN	
Q801	2SC2785-TE	TRANSISTOR SI NPN	
Q801	2SC2785-TF	TRANSISTOR SI NPN	
Q801	2SC2785-TH	TRANSISTOR SI NPN	
Q801	2SC2785-TJ	TRANSISTOR SI NPN	
Q801	2SC2785-TK	TRANSISTOR SI NPN	
Q801	2SC3311AQA	TRANSISTOR SI NPN	
Q801	2SC3311ARA	TRANSISTOR SI NPN	
Q801	2SC3311ASA	TRANSISTOR SI NPN	
Q801	2SC945A-TPA	TRANSISTOR SI NPN	
Q801	2SC945A-TQA	TRANSISTOR SI NPN	
Q1301	2SD1458	TRANSISTOR SI NPN	
Q1301	2SD225900A	TRANSISTOR SI NPN	
Q1302	2SC4559LP.KT	TRANSISTOR SI NPN	⚠
Q1302	2SC4130LF608	TRANSISTOR SI NPN	⚠

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D401	B0EAKL000049	DIODE SI	
D401	B0EAKL000044	DIODE SI	
D401	B0EAKL000045	DIODE SI	
D502	MA2C165001VT	DIODE SI	
D502	B0AACK000004	DIODE SI	
D502	1SS119	DIODE SI	
D503	ERB43-04V	DIODE SI	
D503	B0HAJP000012	DIODE SI	
D504	MAZ40470MF	DIODE ZENER 4.7V	
D504	MAZ40470HF	DIODE ZENER 4.7V	
D504	RD4.7ESAB	DIODE ZENER 4.7V	
D504	RD4.7ESAB2	DIODE ZENER 4.7V	
D504	04AZ4.7ZTPA7	DIODE ZENER 4.7V	
D507	MA2C165001VT	DIODE SI	
D507	B0AACK000004	DIODE SI	
D507	1SS119	DIODE SI	
D553	ERB43-04V	DIODE SI	
D553	B0HAJP000012	DIODE SI	
D554	4148-TA	DIODE SI	
D554	MA2C16700E	DIODE SI	
D558	ERB43-04V	DIODE SI	
D558	B0HAJP000012	DIODE SI	
D571	MAZ40470MF	DIODE ZENER 4.7V	
D571	B0BA4R600003	DIODE ZENER 4.7V	
D571	RD4.7ESAB2	DIODE ZENER 4.7V	
D572	MA4110N-H	DIODE ZENER 11V	
D573	MA2C165001VT	DIODE SI	
D573	B0AACK000004	DIODE SI	
D573	1SS119	DIODE SI	
D574	MA2C165001VT	DIODE SI	
D574	B0AACK000004	DIODE SI	
D574	1SS119	DIODE SI	
D591	D4DDD3R00002	THEARMISTOR	⚠
D801	B0AAKT000010	DIODE SI	⚠
D801	B0AAKT000009	DIODE SI	⚠
D801	B0EAKT000007	DIODE SI	⚠
D801	B0EAKT000027	DIODE SI	⚠
D801	EM02BMV1	DIODE SI	⚠
D802	B0AAKT000010	DIODE SI	⚠
D802	B0AAKT000009	DIODE SI	⚠
D802	B0EAKT000007	DIODE SI	⚠
D802	B0EAKT000027	DIODE SI	⚠
D802	EM02BMV1	DIODE SI	⚠
D803	B0AAKT000010	DIODE SI	⚠
D803	B0AAKT000009	DIODE SI	⚠
D803	B0EAKT000007	DIODE SI	⚠
D803	B0EAKT000027	DIODE SI	⚠
D803	EM02BMV1	DIODE SI	⚠
D804	B0AAKT000010	DIODE SI	⚠
D804	B0AAKT000009	DIODE SI	⚠
D804	B0EAKT000007	DIODE SI	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D804	B0EAKT000027	DIODE SI	⚠
D804	EM02BMV1	DIODE SI	⚠
D805	MA2C16700E	DIODE SI	
D805	4148-TA	DIODE SI	
D881	ERZV10V361CS	SURGE ABSORBER	⚠
D881	D4EAA3610001	SURGE ABSORBER	⚠
D882	ERZV10V361CS	SURGE ABSORBER	⚠
D882	D4EAA3610001	SURGE ABSORBER	⚠
D1301	DB105G	DIODE SI	⚠
D1301	B0EBKR000003	DIODE SI	⚠
D1301	B0EBKR000020	DIODE SI	⚠
D1302	B0HAHP000014	DIODE SI	
D1302	B0HAJP000007	DIODE SI	
D1302	B0HAMP000061	DIODE SI	
D1303	MA2C165001VT	DIODE SI	
D1303	B0AACK000004	DIODE SI	
D1303	1SS119	DIODE SI	
D1304	B0HAHP000014	DIODE SI	
D1304	B0HAJP000007	DIODE SI	
D1304	B0HAMP000061	DIODE SI	
D1305	ERB32-01L3	DIODE SI	
D1305	B0HAML000013	DIODE SI	
D1305	B0HAML000014	DIODE SI	
D1305	RGP15GL-5008	DIODE SI	
D1306	MA2270	DIODE ZENER	⚠

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R401	ERDS2TJ561	CARBON 1/4W 560	
R402	ERDS2TJ223	CARBON 1/4W 22K	
R405	ERG1SJ331P	METAL OXIDE 1W 330	
R409	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R410	ERDS2TJ392	CARBON 1/4W 3.9K	
R411	ERDS2TJ823	CARBON 1/4W 82K	
R413	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R414	ERDS1FJ1R2P	CARBON 1/2W 1.2	⚠
R422	ERDS2TJ331	CARBON 1/4W 330	
R427	ERDS1FJ1R5P	CARBON 1/2W 1.5	⚠
R431	ERDS2TJ103	CARBON 1/4W 10K	
R432	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R433	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R434	ERDS2TJ103	CARBON 1/4W 10K	
R435	ERDS2TJ102	CARBON 1/4W 1K	
R436	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R466	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R467	ERDS1FJ152P	CARBON 1/2W 1.5K	
R468	ERDS2TJ102	CARBON 1/4W 1K	
R501	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R502	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R503	ER0S2THF9101	PRESISION METAL FILM 1/4W 9.1K	⚠
R503	ER0S2TKF9101	PRECISION METAL FILM 1/4W 9.1K	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
R503	VRESR4TF9101	PRECISION METAL FILM 1/4W 9.1K	⚠
R504	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R505	ERDS2TJ561	CARBON 1/4W 560	
R509	ERDS2TJ101	CARBON 1/4W 100	
R511	ERG3FJ222H	METAL OXIDE 3W 0.22	
R516	LAR05272J09	W FLMPRF 5W 2.7K	
R517	ERDS2TJ472	CARBON 1/4W 4.7K	
R518	ERDS1FJ1R0P	CARBON 1/2W 1	⚠
R519	ERDS2TJ123	CARBON 1/4W 12K	
R520	ERDS2TJ562	CARBON 1/4W 5.6K	
R525	ERDS2TJ122	CARBON 1/4W 1.2K	
R529	ERDS2TJ103	CARBON 1/4W 10K	
R531	ERDS2TJ223	CARBON 1/4W 22K	
R532	ERG2SJ102P	METAL OXIDE 2W 1K	
R533	ERDS2TJ332	CARBON 1/4W 3.3K	
R534	ERDS2TJ681	CARBON 1/4W 680	
R535	ERDS2TJ471	CARBON 1/4W 470	
R536	ERG2ANJ153H	METAL OXIDE 2W 15K	
R536	ERG2ANJP153H	METAL OXIDE 2W 15K	
R537	ERG2ANJ153H	METAL OXIDE 2W 15K	
R537	ERG2ANJP153H	METAL OXIDE 2W 15K	
R538	ERDS2TJ473	CARBON 1/4W 47K	
R539	ERDS2TJ473	CARBON 1/4W 47K	
R540	ERDS2TJ562	CARBON 1/4W 5.6K	
R541	ERDS2TJ222	CARBON 1/4W 2.2K	
R542	ERDS2TJ473	CARBON 1/4W 47K	
R543	ERDS2TJ102	CARBON 1/4W 1K	
R544	ERDS2TJ101	CARBON 1/4W 100	
R545	ERDS2TJ152	CARBON 1/4W 1.5K	
R546	ERDS2TJ223	CARBON 1/4W 22K	
R552	ERDS2TJ472	CARBON 1/4W 4.7K	
R553	ERDS2TJ102	CARBON 1/4W 1K	
R554	ERDS2TJ123	CARBON 1/4W 12K	
R555	ERDS2TJ823	CARBON 1/4W 82K	
R556	ERDS2TJ823	CARBON 1/4W 82K	
R558	ERG2ANJ561H	METAL OXIDE 2W 560	
R559	ERDS2TJ123	CARBON 1/4W 12K	
R561	ERQ1CJP1R5S	FUSE 1W 1.5	⚠
R562	ERF2AK3R9P	W FLMPRF 2W 3.9	
R571	ERDS2TJ101	CARBON 1/4W 100	
R572	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R573	ERDS2TJ221	CARBON 1/4W 220	
R574	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R581	ERDS1FJ1R5P	CARBON 1/2W 1.5	⚠
R582	ERDS1FJ1R2P	CARBON 1/2W 1.2	⚠
R584	ERDS2TJ272	CARBON 1/4W 2.7K	
R585	ERDS2TJ473	CARBON 1/4W 47K	
R586	ERDS2TJ393	CARBON 1/4W 39K	
R591	ERF5ZJ121	W FLMPRF 5W 120	
R801	ERF3AKR82	W FLMPRF 3W 0.82	⚠
R802	ERDS1FJ103P	CARBON 1/2W 10K	⚠
R802	ERDS1FPJ103	CARBON 1/2W 10K	⚠
R804	ERF15ZJ181	W FLMPRF 15W 180	

Ref. No.	Part No.	Part Name & Description	Remarks
R805	ERDS2TJ104	CARBON 1/4W 100K	
R806	ERQ14AJ470P	FUSE 1/4W 47	⚠
R810	ERDS2TJ123	CARBON 1/4W 12K	
R813	ERDS2TJ104	CARBON 1/4W 100K	
R818	VRESC2TK825T	CARBON 1/2W 8.2M	⚠
R865	ERDS2TJ222	CARBON 1/4W 2.2K	
R1301	ERDS2TJ332	CARBON 1/4W 3.3K	
R1302	D0AF334JA038	CARBON 1/2W 330K	
R1303	ERG1SJ560P	METAL OXIDE 1W 56	
R1304	ERG2SJ333H	METAL OXIDE 2W 33K	
R1305	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1306	D0AF150JA038	CARBON 1/2W 15	
R1307	ERDS2TJ101	CARBON 1/4W 100	
R1308	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R1309	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1310	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1311	ERJ6ENF1542V	MGF CHIP 1/10W 15.4K	
R1312	ERJ6ENF2001V	MGF CHIP 1/10W 2K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C401	ECEA1HGE2R2	ELECTROLYTIC 50V 2.2UF	
C402	ECA1CM471B	ELECTROLYTIC 16V 470UF	
C408	ECA1HGE010KB	ELECTROLYTIC 50V 1UF	
C409	ECA1VM221B	ELECTROLYTIC 35V 220UF	
C413	ECQB1H104KF	POLYESTER 50V 0.1UF	
C414	ECA1EM102B	ELECTROLYTIC 25V 1000UF	
C418	ECA1VM221B	ELECTROLYTIC 35V 220UF	
C459	ECJ2VB1E103K	C CHIP 25V 0.01UF	
C510	ECKR2H102KB5	CERAMIC 500V 1000PF	
C513	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C524	ECKW3D221KBP	CERAMIC 2KV 220PF	⚠
C531	ECA1HM3R3B	ELECTROLYTIC 50V 3.3UF	
C533	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C534	ECA1HM2R2B	ELECTROLYTIC 50V 2.2UF	
C554	ECWH12H822JS	POLYESTER 1200V 8200PF	⚠
C554	ECWH16822JVB	POLYESTER 1250V 0.082UF	⚠
C556	ECWF2244JBB	POLYESTER 250V 0.24UF	
C558	ECA1VM331B	ELECTROLYTIC 35V 330UF	
C560	ECA2EM100B	ELECTROLYTIC 250V 10UF	
C561	ECA1HM2R2B	ELECTROLYTIC 50V 2.2UF	
C563	ECEA180V33WE	ELECTROLYTIC 180V 33UF	
C571	ECA1HM100B	ELECTROLYTIC 50V 10UF	
C572	ECA1CM221B	ELECTROLYTIC 16V 220UF	
C573	ECKR2H122KB5	CERAMIC 50V 1200PF	
C801	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C802	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C803	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C804	VCKSRNG472ZX	CERAMIC 250V 4700PF	
C805	EC0S2PP471BB	ELECTROLYTIC 180V 470UF	⚠
C806	ECA2EM220E	ELECTROLYTIC 250V 22UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C807	J0LE00000023	ARRESTER	⚠
C808	ECQU2A823MLA	POLYESTER 250V 0.082UF	⚠
C808	LSCFQ2A823MC	POLYESTER 250V 0.082UF	⚠
C811	F1B2E102A012	CERAMIC 250V 1000PF	⚠
C811	F1B2E102A011	CERAMIC 250V 1000PF	⚠
C811	F1B2E102A044	CERAMIC 250V 1000PF	⚠
C811	F1B2E102A045	CERAMIC 250V 1000PF	⚠
C811	F1B2E1020005	CERAMIC 250V 1000PF	⚠
C811	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1302	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1307	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1308	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1308	F2A2D8200001	ELECTROLYTIC 200V 82UF	⚠
C1308	F2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1308	VCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1309	ECKR2H221KB5	CERAMIC 500V 220PF	
C1310	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1311	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1312	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1313	ECJ2VB1H102K	C CHIP 50V 1000PF	
C1314	ECA1VM102	ELECTROLYTIC 35V 1000UF	
C1315	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1316	ECA1VM102	ELECTROLYTIC 35V 1000UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L501	G0D790000001	LINEARITY COIL	⚠
L801	ELF21V018A	LINE NOISE FILTER	⚠
L801	LLN63055A	COIL	⚠
L803	ELF21V018A	LINE NOISE FILTER	⚠
L1301	ELF15N005A	LINE FILTER 0.5A 18MH	⚠
L1301	ELF18D290A	LINE FILTER 0.5A 18MH	⚠
L1301	G0B183D00001	LINE FILTER 0.5A 18MH	⚠
L1301	J0HBLD000001	LINE FILTER 0.5A 18MH	⚠
L1301	VLQS0167	LINE FILTER 0.5A 18MH	⚠
L1301	VLQS0170	LINE FILTER 0.6A 18MH	⚠
L1302	J0JHB0000021	FILTER	
L1303	VLQSAB7D220K	COIL 22UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P501	VJPS0772	CONNECTOR PLUG 19P	
P552	K1MP04A00007	4P WIRE TRAP	
P801	LSJP0814	CONNECTOR 2P	
P802	VEKS5826	CONNECTOR CABLE W/PLUG,AC 120V	
P804	VEKS5825	CONNECTOR CABLE W/PLUG,0V	
P805	VEKS5875	CONNECTOR CABLE W/PLUG,AC 120V	
P1303	K1KA02A00009	PIN HEADER 2P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F801	K5D632AQ0002	FUSE 125V 6.3A	⚠
F801	K5D632ADA001	FUSE 125V 6.3A	⚠
F801	XBA1C63NU100	FUSE 6.3A	⚠
F1301	VSFS0003A16	FUSE 125V 1.6A	⚠
F1301	K5D162AB0003	FUSE 125V 1.6A	⚠
F1301	K5D162ADA001	FUSE 125V 1.6A	⚠
F1301	K5D162AQ0004	FUSE 125V 1.6A	⚠
PR1301	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1301	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1301	LSSF009A25E	IC PROTECTOR 1.5A	⚠

RELAY

Ref. No.	Part No.	Part Name & Description	Remarks
RL801	LSSY0004	RELAY	⚠
RL801	K6B1AGA00042	RELAY,120V	⚠
RL801	TSEH0013	RELAY	⚠
RL801	TSEH1860-1	RELAY	⚠
RL801	TSEH8007	RELAY,120V	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T501	ETH09K13AZ	TRANSFORMER	
T551	KFT4AB407F	FLYBACK TRANSFORMER	⚠
T1301	LSTP0114	TRANSFORMER	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
293	TMM76455	PURSE LOCK CLAMPER	
470	XTV3+10G	TAPPING SCREW,STEEL	
483	XYN3+F10S	SCREW W/WASHER,STEEL	
484	XTW3+10J	TAPPING SCREW,STEEL	
487	XYN3+J8	SCREW W/WASHER,STEEL	
728	LUS63008A	HEAT SINK	
741	LSJA0343	AC CORD W/PLUG,120V	⚠
741	LSJA0362	AC CORD W/PLUG,120V	⚠
741	LSJA0364	AC CORD W/PLUG,120V	⚠
751	LML69001A	ANODE LEAD CLAMPER	
760	TUC77628	HEAT SINK	
768	TUC77603-1	HEAT SINK	
771	EYF52BC	FUSE HOLDER	

12.3.6. POWER SUPPLY C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	0N3131-R.KT	IC, LINEAR	⚠
IC1001	0N3131-S.KT	IC, LINEAR	⚠
IC1002	TA76431ASTP6	IC, LINEAR	
IC1002	B1AZKD000001	IC, LINEAR	
IC1002	C0DAEMZ00001	IC, LINEAR	
IC1501	C5HABZZ00101	IC, LINEAR	⚠
IC1502	0N3131-R.KT	IC, LINEAR	⚠
IC1502	0N3131-S.KT	IC, LINEAR	⚠
IC1503	TA76431ASTP6	IC, LINEAR	
IC1503	B1AZKD000001	IC, LINEAR	
IC1503	C0DAEMZ00001	IC, LINEAR	
IC9551	UPC4570G	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC4953LP.KT	TRANSISTOR SI NPN	⚠
Q1001	2SC5130LF608	TRANSISTOR SI NPN	⚠
Q1002	2SD1458	TRANSISTOR SI NPN	
Q1002	2SD225900A	TRANSISTOR SI NPN	
Q1051	2SD2375-PQ	TRANSISTOR SI NPN	
Q1051	B1BACG000020	TRANSISTOR SI NPN	
Q1051	2SD2396-K	TRANSISTOR SI NPN	
Q1052	2SD601-RS	TRANSISTOR SI NPN CHIP	
Q1052	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1053	2SD235800A	TRANSISTOR SI NPN CHIP	
Q1053	B1AAQB000002	TRANSISTOR SI NPN CHIP	
Q1070	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q1070	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q1071	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q1071	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q1080	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q1080	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q1081	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q1081	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q1501	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q1501	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1502	XP132A1275SR	TRANSISTOR FET	
Q1503	2SD2159-T	TRANSISTOR SI NPN	
Q1503	2SD1581-T	TRANSISTOR SI NPN	
Q1504	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q1504	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1505	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q1505	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q1506	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q1506	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q7001	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q7001	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q9501	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q9501	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q9502	2SD1819A0L	TRANSISTOR SI NPN CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q9502	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q9503	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q9503	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q9504	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q9504	B1ABCF000020	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	DB105G	DIODE SI	⚠
D1001	B0EBKR000003	DIODE SI	⚠
D1001	B0EBKR000020	DIODE SI	⚠
D1002	B0HAHP000014	DIODE SI	
D1002	B0HAJP000007	DIODE SI	
D1002	B0HAMP000061	DIODE SI	
D1003	B0HAHP000014	DIODE SI	
D1003	B0HAJP000007	DIODE SI	
D1003	B0HAMP000061	DIODE SI	
D1005	B0HAHP000014	DIODE SI	
D1005	B0HAJP000007	DIODE SI	
D1005	B0HAMP000061	DIODE SI	
D1006	ERB32-01L3	DIODE SI	
D1006	B0HAML000013	DIODE SI	
D1006	B0HAML000014	DIODE SI	
D1006	RGP15GL-5008	DIODE SI	
D1008	ERB81-004V1	DIODE SI	
D1008	B0JAME000049	DIODE SI	
D1008	B0JANE000011	DIODE SI	
D1015	MA2180LA	DIODE ZENER 18V	⚠
D1015	1N4746A-T	DIODE ZENER 18V	⚠
D1015	1N4746ARL	DIODE ZENER 18V	⚠
D1016	MA2C165001VT	DIODE SI	
D1016	B0AACK000004	DIODE SI	
D1016	1SS119	DIODE SI	
D1052	MA4110N-H	DIODE ZENER 11V	
D1071	B0HAHP000014	DIODE SI	
D1071	B0HAJP000007	DIODE SI	
D1071	B0HAMP000061	DIODE SI	
D1501	DB105G	DIODE SI	⚠
D1501	B0EBKR000003	DIODE SI	⚠
D1501	B0EBKR000020	DIODE SI	⚠
D1502	B0JAMD000012	DIODE SI	
D1502	B0JAGE000001	DIODE SI	
D1502	1GWJ43TPA3	DIODE SI	
D1503	B0HAJL000001	DIODE SI	
D1503	B0HAGP000012	DIODE SI	
D1504	B0HAJL000001	DIODE SI	
D1504	B0HAGP000012	DIODE SI	
D1505	B0HAJL000001	DIODE SI	
D1505	B0HAGP000012	DIODE SI	
D1506	B0HAJL000001	DIODE SI	
D1506	B0HAGP000012	DIODE SI	

Ref. No.	Part No.	Part Name & Description	Remarks
D1507	B0HAHP000014	DIODE SI	
D1507	B0HAJP000007	DIODE SI	
D1507	B0HAMP000061	DIODE SI	
D1508	ERB32-01L3	DIODE SI	
D1508	B0HAML000013	DIODE SI	
D1508	B0HAML000014	DIODE SI	
D1508	RGP15GL-5008	DIODE SI	
D1509	ERC81-006L7	DIODE SI	
D1509	B0JAPG000021	DIODE SI	
D1509	RK46LF015302	DIODE SI	
D1512	MA4091N-H	DIODE ZENER 9.1V	
D9501	MA2C165001VT	DIODE SI	
D9501	B0AACK000004	DIODE SI	
D9501	1SS119	DIODE SI	
D9502	MA2C165001VT	DIODE SI	
D9502	B0AACK000004	DIODE SI	
D9502	1SS119	DIODE SI	
D9505	MAZ40910MF	DIODE ZENER 9.1V	
D9505	MA4091-MKT	DIODE ZENER 9.1V	
D9505	MA4091-MMKT	DIODE ZENER 9.1V	
D9505	RD9.1ESAB1	DIODE ZENER 9.1V	
D9505	RD9.1ESAB2	DIODE ZENER 9.1V	
D9505	04AZ9.1ZTPA7	DIODE ZENER 9.1V	
D9551	MA2C165001VT	DIODE SI	
D9551	B0AACK000004	DIODE SI	
D9551	1SS119	DIODE SI	
D9552	MA2C165001VT	DIODE SI	
D9552	B0AACK000004	DIODE SI	
D9552	1SS119	DIODE SI	
D9561	MA2C165001VT	DIODE SI	
D9561	B0AACK000004	DIODE SI	
D9561	1SS119	DIODE SI	
D9562	MA2C165001VT	DIODE SI	
D9562	B0AACK000004	DIODE SI	
D9562	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1002	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1003	D0AF334JA038	CARBON 1/2W 330K	
R1004	ERG2SJ333H	METAL OXIDE 2W 33K	
R1005	ERG1SJ560P	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R1008	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1009	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1010	ERD25FJ100P	CARBON 1/4W 10	⚠
R1010	ERD25FPJ100P	CARBON 1/4W 10	⚠
R1010	VRESF4FJ100P	CARBON 1/4W 10	⚠
R1012	D1BD2431A016	MGF CHIP 1/10W 2.43K	
R1013	D0HD222ZA002	MGF CHIP 1/10W 2.2K	
R1025	D0AF150JA038	CARBON 1/2W 15	
R1051	ERDS2TJ331	CARBON 1/4W 330	
R1053	ERDS2TJ153	CARBON 1/4W 15K	
R1054	ERDS2TJ153	CARBON 1/4W 15K	
R1055	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1057	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1070	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R1071	ERJ6GEYJ154V	MGF CHIP 1/10W 150K	
R1072	ERDS2TJ152	CARBON 1/4W 1.5K	
R1073	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1074	ERDS2T0T	CARBON 1/4W 0	
R1080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1081	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R1082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1083	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1501	D0AF473JA038	CARBON 1/2W 47K	
R1502	ERD2FCG681V	FUSE 1/4W 680	⚠
R1504	ERX2SJR22P	METAL FILM 2W 0.22	
R1505	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R1507	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R1508	ERG2SJ104P	METAL OXIDE 2W 100K	
R1510	ERDS2TJ101	CARBON 1/4W 100	
R1511	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1512	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1513	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R1514	D1BD2431A016	MGF CHIP 1/10W 2.43K	
R1515	D0HD222ZA002	MGF CHIP 1/10W 2.2K	
R1518	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1519	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R1520	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R1521	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R1524	ERDS2TJ153	CARBON 1/4W 15K	
R1525	ERDS2TJ153	CARBON 1/4W 15K	
R1526	ERJ14YJ181H	MGF CHIP 1/4W 180	
R1528	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1529	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1530	ERDS2TJ822	CARBON 1/4W 8.2K	
R1531	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1532	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	

Ref. No.	Part No.	Part Name & Description	Remarks
R1605	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R7001	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7002	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7003	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7004	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7005	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R7006	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7007	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R7008	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9501	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R9502	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R9506	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9508	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9510	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9511	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9517	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9518	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R9519	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R9525	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R9526	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R9527	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R9528	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R9529	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R9532	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R9545	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R9546	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R9551	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R9552	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R9553	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R9554	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1002	ECKATS103MF	CERAMIC 250V 0.01UF	
C1002	ECKETS103MY	CERAMIC 250V 0.01UF	
C1002	VCKST3G103MY	CERAMIC 250V 0.01UF	
C1002	VCKSU3D103MY	CERAMIC 250V 0.01UF	
C1003	F1B2E102A012	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A011	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A044	CERAMIC 250V 1000PF	⚠
C1003	F1B2E102A045	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020005	CERAMIC 250V 1000PF	⚠
C1003	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1004	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1004	F2A2D8200001	ELECTROLYTIC 200V 82UF	⚠
C1004	F2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1004	VCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	
C1006	ECKR2H221KB5	CERAMIC 500V 220PF	
C1007	ECJ2VB1C224K	C CHIP 16V 0.22UF	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1010	ECJ2VB1H103K	C CHIP 50V 0.01UF	
C1011	ECA1HHG470B	ELECTROLYTIC 50V 47UF	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1021	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1029	ECJ2VC1H101J	C CHIP 50V 100PF	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018UF	
C1051	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1055	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C1059	ECA0JM101B	ELECTROLYTIC 6.3V 100UF	
C1061	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1063	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1070	ECEA1CKA220B	ELECTROLYTIC 16V 22UF	
C1071	ECA1CM470B	ELECTROLYTIC 16V 47UF	
C1072	ECJ2VC1H101J	C CHIP 50V 100PF	
C1501	F1B2E102A012	CERAMIC 250V 1000PF	⚠
C1501	F1B2E102A011	CERAMIC 250V 1000PF	⚠
C1501	F1B2E102A044	CERAMIC 250V 1000PF	⚠
C1501	F1B2E102A045	CERAMIC 250V 1000PF	⚠
C1501	F1B2E1020005	CERAMIC 250V 1000PF	⚠
C1501	F1B2E1020006	CERAMIC 250V 1000PF	⚠
C1502	ECA1HHG220B	ELECTROLYTIC 50V 22UF	
C1503	ECJ2VC1H471J	C CHIP 50V 470PF	
C1504	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1504	F2A2D8200001	ELECTROLYTIC 200V 82UF	⚠
C1504	F2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1504	VCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1505	F1B3D471A011	CERAMIC 2KV 470PF	
C1506	ECKR2H221KB5	CERAMIC 500V 220PF	
C1507	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1508	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C1509	ECJ2VB1H821K	C CHIP 50V 820PF	
C1510	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1511	EEUFF0J222E	ELECTROLYTIC 6.3V/2200UF	
C1512	ECJ2VB1C224K	C CHIP 16V 0.22UF	
C1513	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1514	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1515	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1517	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1519	ECA0JM331B	ELECTROLYTIC 6.3V 330UF	
C1520	ECJ2VB1H332K	C CHIP 50V 3300PF	
C1523	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1525	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1605	ECJ2VC1H270J	C CHIP 50V 27PF	
C1606	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C1607	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C7002	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7003	ECJ2VC1H330J	C CHIP 50V 33PF	
C7005	ECJ2VC1H330J	C CHIP 50V 33PF	
C7006	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C7007	ECJ2VB1H102K	C CHIP 50V 1000PF	
C7008	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C7010	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C7011	ECJ2VB1H222K	C CHIP 50V 2200PF	
C7012	ECJ2VB1H222K	C CHIP 50V 2200PF	
C9502	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9507	ECEA1CKA220B	ELECTROLYTIC 16V 22UF	
C9510	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9511	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9512	ECEA0JKA221B	ELECTROLYTIC 6.3V 220UF	
C9518	ECEA1CKA220B	ELECTROLYTIC 16V 22UF	
C9519	ECA1CM101B	ELECTROLYTIC 16V 100UF	
C9551	ECJ2VC1H101J	C CHIP 50V 100PF	
C9552	ECJ2VC1H101J	C CHIP 50V 100PF	
C9553	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9554	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C9555	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C9556	ECEA1CKA100	ELECTROLYTIC 16V 10UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N010A	COIL LINE FILTER	⚠
L1002	VLQSAB7D220K	COIL 22UH	
L1003	VLQSAB7D100K	COIL 10UH	
L1006	J0JHB0000021	FILTER	
L1050	ELEXT101KE04	COIL 100UH	
L1501	J0JHB0000021	FILTER	
L1502	J0JHB0000021	FILTER	
L1503	G0A220G00023	COIL 22UH	
L1504	VLQSAB7D220K	COIL 22UH	
L1601	LSLF0035	MGF CHIP 1/10W 0	
L1603	LSLF0035	MGF CHIP 1/10W 0	
L1604	ELESN220KA	COIL 22UH	
L7002	VLQSAB7D100K	COIL 10UH	
L9515	ELESN101KA	COIL 100UH	
L9551	ELESN101KA	COIL 100UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1001	K1KA02A00110	CONNECTOR 2P	
P1501	VJSS0874	CONNECTOR 11P	
P1502	VEKS5876	CONNECTOR CABLE W/PLUG,DC 14V	
P1503	VEKS5801	CONNECTOR CABLE W/PLUG,DC12V	
P7003	VJPS0770	CONNECTOR 11P	
P7101	VJPS0772	CONNECTOR PLUG 19P	
P9503	K1KA04A00371	CONNECTOR 4P	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	K5D302AQ0003	FUSE 125V 3A	⚠
F1001	K5D302ADA002	FUSE 125V 3A	⚠
F1001	K5D302AD0002	FUSE 125V 3A	⚠
PR1001	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1001	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1001	LSSF009A25E	IC PROTECTOR 1.5A	⚠
PR1002	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1002	LSSF009A25E	IC PROTECTOR 1.5A	⚠
PR1070	LSSF009AR37E	IC PROTECTOR 1.5A	⚠
PR1501	LSSF009A35E	IC PROTECTOR	⚠
PR1502	UNH000600A	IC PROTECTOR 1.5A	⚠
PR1502	B1ZAZ0000040	IC PROTECTOR 1.5A	⚠
PR1502	LSSF009A25E	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	VTPS0042-1	SW TRANSFORMER	⚠
T1001	ETS28AD2J3NC	TRANSFORMER	⚠
T1001	LSTP0105	TRANSFORMER	⚠
T1001	VTPS0041-1	SW TRANSFORMER	⚠
T1501	LSTP0122-1	TRANSFORMER	⚠

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK1601	K7AAAB000009	IC, CMOS STNADARD LOGIC	
JK9501	K1CB104B0040	S-VIDEO JACK SOCKET	
JK9502	K2HA305B0003	AUDIO/VIDEO JACK SOCKET	
JK9503	K2HA203B0011	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
712	VMTS0035	CUSHION,RUBBER	
743	ENG36709GL	TUNER,UHF/VHF NR	
771	EYF52BC	FUSE HOLDER	
796	LSEQ0647	SHIELD PLATE UNIT	

12.3.7. AUDIO AMP C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC4501	C1BA00000217	IC, BIPOLAR LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4501	2SD13280TL	TRANSISTOR SI NPN CHIP	
Q4501	2SD13280SL	TRANSISTOR SI NPN CHIP	
Q4502	2SD13280TL	TRANSISTOR SI NPN CHIP	
Q4502	2SD13280SL	TRANSISTOR SI NPN CHIP	
Q4503	2SD2159-T	TRANSISTOR SI NPN	
Q4503	2SD1581-T	TRANSISTOR SI NPN	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4501	MA2C165001VT	DIODE SI	
D4501	B0AACK000004	DIODE SI	
D4501	1SS119	DIODE SI	
D4502	MA2C165001VT	DIODE SI	
D4502	B0AACK000004	DIODE SI	
D4502	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4501	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R4502	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R4503	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4504	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4505	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4506	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4507	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4508	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R4509	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4510	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4513	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R4514	ERJ6GEYJ151V	MGF CHIP 1/10W 150	
R4515	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4516	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4519	ERDS2TJ4R7	CARBON 1/4W 4.7	
R4520	ERDS2TJ4R7	CARBON 1/4W 4.7	
R4521	ERDS2TJ4R7	CARBON 1/4W 4.7	
R4522	ERDS2TJ4R7	CARBON 1/4W 4.7	
R4523	ERJ6GEYJ561V	MGF CHIP 1/10W 560	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4501	ECA1CM101B	ELECTROLYTIC 16V 100UF	
C4502	ECA1CM101B	ELECTROLYTIC 16V 100UF	
C4503	ECJ2VB1H222K	C CHIP 50V 2200PF	
C4504	ECJ2VB1H222K	C CHIP 50V 2200PF	
C4505	ECJ2VB1H222K	C CHIP 50V 2200PF	
C4506	ECJ2VB1H222K	C CHIP 50V 2200PF	
C4507	ECA1HM4R7B	ELECTROLYTIC 50V 4.7UF	
C4508	ECA1HM4R7B	ELECTROLYTIC 50V 4.7UF	
C4509	ECA1EM470B	ELECTROLYTIC 25V 47UF	
C4510	ECA1EM470B	ELECTROLYTIC 25V 47UF	
C4511	ECQB1H104KF	POLYESTER 50V 0.1UF	
C4512	ECQB1H104KF	POLYESTER 50V 0.1UF	
C4513	ECA1CM102B	ELECTROLYTIC 16V 1000UF	
C4514	ECA1CM102B	ELECTROLYTIC 16V 1000UF	
C4515	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C4516	ECA1EM102B	ELECTROLYTIC 25V 1000UF	
C4518	ECA1EM471B	ELECTROLYTIC 25V 470	
C4519	ECA1EM101B	ELECTROLYTIC 25V 100UF	
C4525	ECJ2VF1H103Z	C CHIP 50V 0.01UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L4501	VLQSAB7D680K	COIL 68UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4502	K1KA05A00268	CONNECTOR 5P	
P4503	K1KA02A00375	CONNECTOR 2P	
P4505	K1KA06A00308	CONNECTOR 6P	
P4506	VEKS5833	CONNECTOR CABLE W/PLUG,22V	
P4508	K1KA02A00375	CONNECTOR 2P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
483	XYN3+F10S	SCREW W/WASHER,STEEL	
484	XTW3+10J	TAPPING SCREW,STEEL	
753	LSSC0256	HEAT SINK	

12.3.8. OPERATION C.B.A.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4710	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q4710	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4711	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q4711	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4712	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q4712	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q4713	2SD1819A0L	TRANSISTOR SI NPN CHIP	
Q4713	B1ABCF000020	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4591	MAZ41100MF	DIODE ZENER	
D4592	MAZ41100MF	DIODE ZENER	
D4593	MAZ41100MF	DIODE ZENER	
D4594	MAZ41100MF	DIODE ZENER	
D4706	MA2C165001VT	DIODE SI	
D4706	B0AACK000004	DIODE SI	
D4706	1SS119	DIODE SI	
D4707	MA2C165001VT	DIODE SI	
D4707	B0AACK000004	DIODE SI	
D4707	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4591	ERDS2TJ681	CARBON 1/4W 680	
R4592	ERDS2TJ681	CARBON 1/4W 680	
R4593	ERDS2TJ681	CARBON 1/4W 680	
R4594	ERDS2TJ681	CARBON 1/4W 680	
R4701	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4703	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4705	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4706	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4710	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R4711	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R4712	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4713	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4714	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4715	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R4716	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4717	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4718	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4719	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R4720	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4721	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R4722	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R4723	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R4724	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4725	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4726	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6384	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4710	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4711	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4712	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C4713	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4714	ECJ2VF1H103Z	C CHIP 50V 0.01UF	
C4715	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C4716	ECEA1CKA101I	ELECTROLYTIC 16V 100UF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L4710	ELESN101KA	COIL 100UH	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4591	K1KA05A00268	CONNECTOR 5P	
P4701	VJPS0772	CONNECTOR PLUG 19P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6383	EVQ21405R	PUSH SWITCH	
SW6384	EVQ21405R	PUSH SWITCH	
SW6385	EVQ21405R	PUSH SWITCH	
SW6386	EVQ21405R	PUSH SWITCH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4591	K2HC103B0047	EARPHONE JACK SOCKET	
JK4701	K1CB104B0040	S-VIDEO JACK SOCKET	
JK4702	LSJJ0168	FRONT AUDIO/VIDEO JACK SOCKET	

12.3.9. DVD DECODER C.B.A.

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC8000	ES4318F	IC, 32BIT MICROCONTROLLER	E.S.D.
IC8001	AT24C04N10SI	IC, 4K EEP ROM	E.S.D.
IC8001	C3EBEC000031	IC, 4K EEP ROM	E.S.D.
IC8001	S-24C04A	IC, 4K EEP ROM	E.S.D.
IC8002	C0JBAF000480	IC, CMOS STANDARD LOGIC	E.S.D.
IC8002	SN74AHCT374N	IC, CMOS STANDARD LOGIC	E.S.D.
IC8003	C0DBZGG00002	IC, LINEAR	
IC8100	C3ABPG000078	IC, 64MBIT SD RAM	E.S.D.
IC8100	C3ABPG000067	IC, 64MBIT SD RAM	E.S.D.
IC8100	C3ABPG000102	IC, 64MBIT SD RAM	E.S.D.
IC8200	ADV7170KSU	IC, LINEAR	
IC8201	C0CBABD00016	IC, LINEAR	
IC8301	C3FBLD000084	IC, 8MBIT FLASH MEMORY	E.S.D.
IC8301	C3FBLG000012	IC, 8MBIT FLASH MEMORY	E.S.D.
IC8401	AN6552S-E1	IC, LINEAR	
IC8403	PCM1723E-2K	IC, LINEAR	
IC8502	C0JBAB000196	IC, CMOS STANDARD LOGIC	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q8000	2SB09560RL	TRANSISTOR SI PNP CHIP	
Q8200	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8201	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8202	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8204	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8205	2SB1218ARL	TRANSISTOR SI PNP CHIP	
Q8206	2SB1218ARL	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D8000	MAZ30510ML	DIODE ZENER 5.1V	
D8001	MAZ30510ML	DIODE ZENER 5.1V	
D8002	MAZ30510ML	DIODE ZENER 5.1V	
D8003	MAZ30510ML	DIODE ZENER 5.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R8004	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8010	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8011	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8012	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8013	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8014	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8015	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8016	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8017	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8018	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8019	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8020	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8021	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8022	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8023	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8024	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8025	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8026	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8027	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8028	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8029	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8030	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8031	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8032	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8033	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8034	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8035	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8036	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8037	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8038	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8039	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8040	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8041	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8042	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8043	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8045	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8047	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8048	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8049	ERJ1WYJ1R0U	MGF CHIP 1W 1	
R8050	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8051	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8052	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8053	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8054	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8055	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8056	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8057	ERJ3GEYJ820V	MGF CHIP 1/16W 82	
R8058	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8059	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8060	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8061	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R8062	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8063	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8064	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8065	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R8066	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8067	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8068	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8069	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8074	ERJ3GEYJ470V	MGF CHIP 1/16W 47	
R8076	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8077	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8082	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8083	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8084	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8085	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8086	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8087	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8088	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8089	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8090	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8091	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8092	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8093	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8094	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8095	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8096	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8097	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8098	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8099	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8101	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8102	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8103	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8104	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8105	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8106	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8107	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8108	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8109	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8110	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8111	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8113	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8115	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8116	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8117	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8118	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8119	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8120	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8123	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8124	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8125	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8137	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8143	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8144	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8145	ERJ3GEYJ100V	MGF CHIP 1/16W 10	

Ref. No.	Part No.	Part Name & Description	Remarks
R8146	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8147	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8148	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8149	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8150	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8151	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8152	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8153	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8154	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8155	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8156	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8157	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8158	ERJ3GEYJ100V	MGF CHIP 1/16W 10	
R8203	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8204	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8205	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8206	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R8207	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R8208	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R8215	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8216	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8217	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8218	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8220	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8221	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8222	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8223	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8224	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8225	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8230	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8231	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8232	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8233	ERJ3GEYJ151V	MGF CHIP 1/16W 150	
R8234	ERJ3GEYJ302V	MGF CHIP 1/16W 3K	
R8238	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8239	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8240	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R8241	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8292	ERJ8GEYJ1R0V	MGF CHIP 1/8W 1	
R8293	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8294	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8299	EVM3YSX50B23	VARIABLE 2K	
R8300	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8301	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8302	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8304	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R8309	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8310	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8311	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8312	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8313	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8314	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8315	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8316	ERJ3GEYJ330V	MGF CHIP 1/16W 33	

Ref. No.	Part No.	Part Name & Description	Remarks
R8317	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8318	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8319	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8320	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8321	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8322	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8323	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8324	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8326	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8327	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8328	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8329	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8330	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8331	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8332	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8333	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8334	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8335	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8336	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8337	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8338	ERJ3GEYJ621V	MGF CHIP 1/16W 620	
R8339	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R8340	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8341	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8342	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8343	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8344	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8345	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8346	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8347	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8348	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8349	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8350	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8351	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8352	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8353	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8354	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8355	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8356	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8357	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8358	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8359	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8360	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8361	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8362	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8363	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8364	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8365	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8366	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8367	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8368	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8369	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8370	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8371	ERJ3GEYJ220V	MGF CHIP 1/16W 22	

Ref. No.	Part No.	Part Name & Description	Remarks
R8372	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8373	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8374	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8375	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8376	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8377	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8378	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8379	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8380	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8381	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8382	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8383	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8384	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8385	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8386	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8387	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8388	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8389	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8390	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8391	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8392	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8393	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8394	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8395	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8396	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8397	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8398	ERJ3GEYJ220V	MGF CHIP 1/16W 22	
R8403	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8404	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8405	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8406	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R8407	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8408	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R8409	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8410	ERJ3GEYJ622V	MGF CHIP 1/16W 6.2K	
R8411	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8412	ERJ3EKF1502V	MGF CHIP 1/16W 15K	
R8413	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8414	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R8427	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8429	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8430	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R8431	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8432	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8433	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8434	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8435	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8447	ERJ3GEYJ330V	MGF CHIP 1/16W 33	
R8500	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8501	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8502	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8503	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8504	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R8505	ERJ3GEYJ151V	MGF CHIP 1/16W 150	

Ref. No.	Part No.	Part Name & Description	Remarks
R8506	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8507	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8508	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8509	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R8510	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8511	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8512	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8513	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R8514	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C8000	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8001	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8002	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8003	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8004	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8005	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8006	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8007	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8008	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8009	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8010	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8011	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8012	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8013	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8014	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8015	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8016	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8017	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8018	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8019	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8020	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8021	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8022	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8023	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8025	ECJ2VC1H151J	C CHIP 50V 150PF	
C8026	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8027	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8030	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8031	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8034	ECEV0JA331	ELECTROLYTIC CHIP 6.3V 330UF	
C8041	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8042	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8043	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8044	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8045	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8047	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8048	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8049	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8050	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8054	ECEV1AA101SP	ELECTROLYTIC CHIP 10V 100UF	
C8056	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C8058	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8102	ECUE1C104ZFV	C CHIP 16V 0.1UF	
C8106	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8107	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8109	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8110	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8111	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8112	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8201	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8202	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8203	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8206	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8207	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8208	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8209	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8210	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8211	ECEV0JA101S	ELECTROLYTIC CHIP 6.3V 100UF	
C8215	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8219	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8220	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8221	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8222	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8223	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8224	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8225	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8226	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8227	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8228	ECJ1VC1H390J	C CHIP 50V 39PF	
C8229	ECJ1VC1H390J	C CHIP 50V 39PF	
C8230	ECJ1VC1H220J	C CHIP 50V 22PF	
C8231	ECJ1VC1H390J	C CHIP 50V 39PF	
C8232	ECJ1VC1H390J	C CHIP 50V 39PF	
C8233	ECJ1VC1H220J	C CHIP 50V 22PF	
C8234	ECJ1VC1H390J	C CHIP 50V 39PF	
C8235	ECJ1VC1H390J	C CHIP 50V 39PF	
C8236	ECJ1VC1H220J	C CHIP 50V 22PF	
C8238	ECJ1VC1H220J	C CHIP 50V 22PF	
C8239	ECJ1VC1H220J	C CHIP 50V 22PF	
C8240	ECJ1VC1H220J	C CHIP 50V 22PF	
C8241	ECEV0JA470S	ELECTROLYTIC CHIP 6.3V 47UF	
C8243	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8244	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8245	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8246	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8247	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8248	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8249	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8250	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8251	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8252	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8253	ECUE1H103ZFV	C CHIP 50V 0.01UF	
C8301	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8302	ECJ1VF1A105Z	C CHIP 10V 1UF	
C8303	ECJ1VF1C104Z	C CHIP 16V 0.1UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C8403	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8404	ECEV1CA101	ELECTROLYTIC CHIP 16V 100UF	
C8405	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8406	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8407	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33UF	
C8408	ECEV1EA330SP	ELECTROLYTIC CHIP 25V 33UF	
C8409	ECJ1VC1H101J	C CHIP 50V 100PF	
C8410	ECJ1VC1H101J	C CHIP 50V 100PF	
C8411	ECJ1VB1H102K	C CHIP 50V 1000PF	
C8412	ECJ1VB1H102K	C CHIP 50V 1000PF	
C8414	ECJ1VB1H472K	C CHIP 50V 4700PF	
C8416	ECJ1VB1H472K	C CHIP 50V 4700PF	
C8421	ECJ1VC1H330J	C CHIP 50V 33PF	
C8425	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C8426	ECEV1CA100S	ELECTROLYTIC CHIP 16V 10UF	
C8429	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8430	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8431	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8432	ECEV1CS100S	ELECTROLYTIC CHIP 16V 10UF	
C8438	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8439	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8440	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8442	ECEV1AA470WR	ELECTROLYTIC CHIP 10V 47UF	
C8443	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8507	ECJ1VC1H330J	C CHIP 50V 33PF	
C8508	ECJ1VC1H330J	C CHIP 50V 33PF	
C8509	ECJ1VC1H330J	C CHIP 50V 33PF	
C8510	ECJ1VC1H330J	C CHIP 50V 33PF	
C8511	ECJ1VC1H330J	C CHIP 50V 33PF	
C8513	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C8514	ECJ1VF1C104Z	C CHIP 16V 0.1UF	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL8000	LSLF0014	EMI FILTER CHIP	
FL8001	LSLF0014	EMI FILTER CHIP	
FL8002	LSLF0014	EMI FILTER CHIP	
FL8003	LSLF0014	EMI FILTER CHIP	
FL8200	LSLF0014	EMI FILTER CHIP	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L8000	J0JHC0000027	EMI FILTER CHIP	
L8002	J0JBC0000010	EMI FILTER CHIP	
L8003	J0JBC0000010	EMI FILTER CHIP	
L8004	J0JBC0000010	EMI FILTER CHIP	
L8005	J0JBC0000010	EMI FILTER CHIP	
L8006	J0JBC0000010	EMI FILTER CHIP	
L8007	J0JBC0000010	EMI FILTER CHIP	
L8009	LSLF0008	LOW PASS FILTER	
L8010	LSLF0008	LOW PASS FILTER	
L8011	J0JGC0000017	EMI FILTER CHIP	
L8012	J0JGC0000017	EMI FILTER CHIP	
L8013	J0JGC0000017	EMI FILTER CHIP	
L8017	LSLF0006	LOW PASS FILTER	
L8018	J0JBC0000010	EMI FILTER CHIP	
L8020	J0JBC0000010	EMI FILTER CHIP	
L8021	J0JCC0000117	EMI FILTER CHIP	
L8022	J0JHC0000027	EMI FILTER CHIP	
L8023	LSLF0015	EMI FILTER CHIP	
L8102	LSLF0015	EMI FILTER CHIP	
L8200	LSLF0015	EMI FILTER CHIP	
L8204	J0JBC0000010	EMI FILTER CHIP	
L8205	J0JBC0000010	EMI FILTER CHIP	
L8206	J0JBC0000010	EMI FILTER CHIP	
L8207	J0JHC0000027	EMI FILTER CHIP	
L8210	LSLF0006	LOW PASS FILTER	
L8212	G1C270MA0021	INDUCTOR CHIP	
L8213	G1C330MA0021	INDUCTOR CHIP	
L8214	G1C270MA0021	INDUCTOR CHIP	
L8215	G1C270MA0021	INDUCTOR CHIP	
L8216	G1C330MA0021	INDUCTOR CHIP	
L8217	G1C270MA0021	INDUCTOR CHIP	
L8218	G1C270MA0021	INDUCTOR CHIP	
L8219	G1C330MA0021	INDUCTOR CHIP	
L8220	G1C270MA0021	INDUCTOR CHIP	
L8222	LSLF0015	EMI FILTER CHIP	
L8223	LSLF0015	EMI FILTER CHIP	
L8301	LSLF0006	LOW PASS FILTER	
L8400	J0JBC0000010	EMI FILTER CHIP	
L8401	J0JBC0000010	EMI FILTER CHIP	
L8402	LSLF0032	EMI FILTER CHIP	
L8410	J0JBC0000010	EMI FILTER CHIP	
L8411	J0JBC0000010	EMI FILTER CHIP	
L8416	LSLF0006	LOW PASS FILTER	
L8501	LSLF0006	LOW PASS FILTER	
L8506	G1C1R0K00005	INDUCTOR CHIP	
L8507	G1C1R0K00005	INDUCTOR CHIP	
L8508	G1C1R0K00005	INDUCTOR CHIP	
L8511	LSLF0015	EMI FILTER CHIP	
L8512	G1C1R0K00005	INDUCTOR CHIP	
L8513	G1C1R0K00005	INDUCTOR CHIP	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X8501	VSXS0240	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P8001	VJPS0770	CONNECTOR 11P	
P8002	VJPS0771	CONNECTOR PLUG 13P	
P8003	VJPS0771	CONNECTOR PLUG 13P	
P8004	LSJS0040	CONNECTOR 40P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
737	VEKS5836	CONNECTOR CABLE W/PLUG,0V	
791	VEKS5773	CONNECTOR CABLE W/PLUG,DC 5V	

13. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

POWER SUPPLY C.B.A. LSEP2066A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

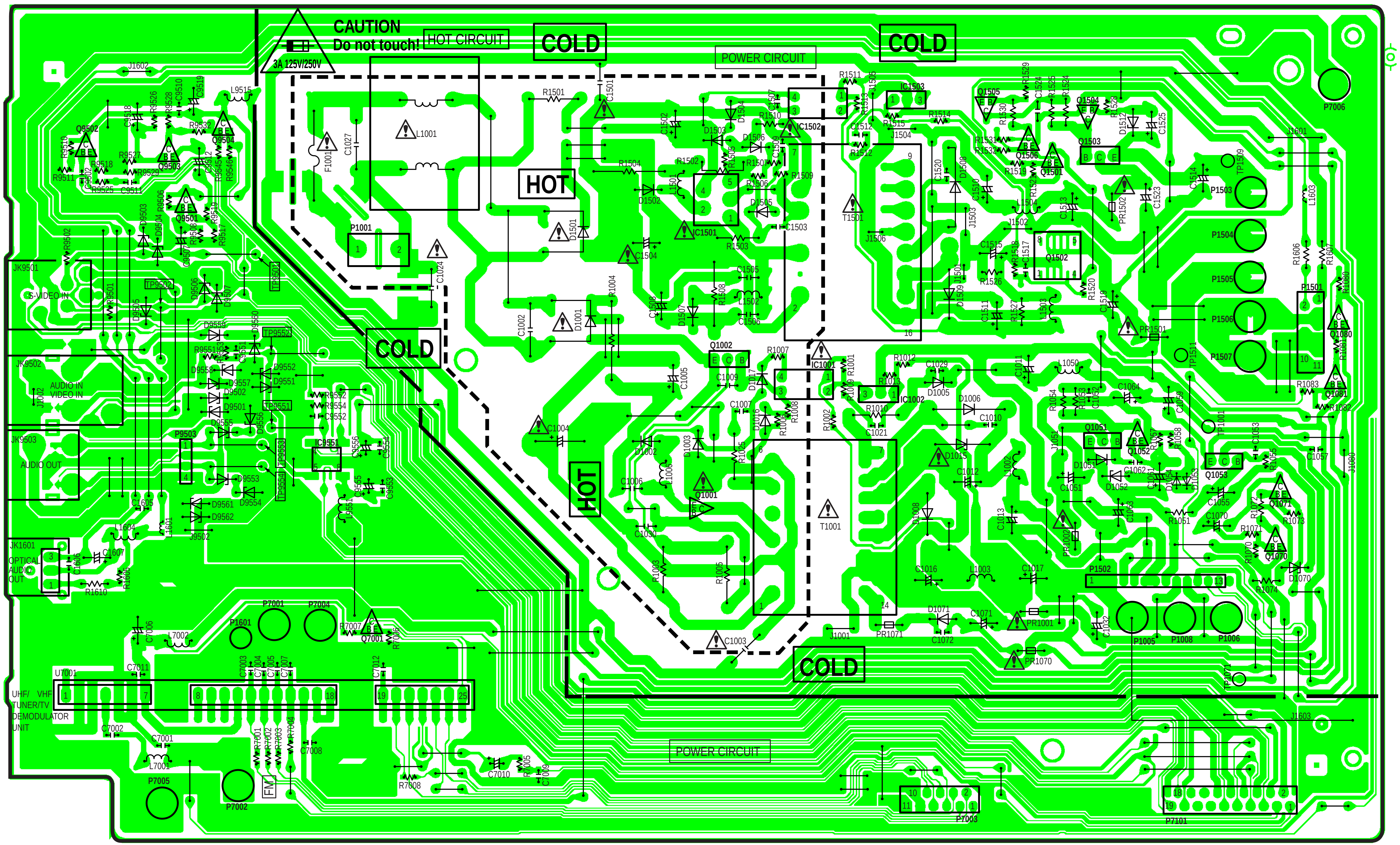
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

3A 125V/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 3A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.


CAUTION
Do not touch!
3A 125V/250V
HOT CIRCUIT
COLD
POWER CIRCUIT
COLD
HOT
HOT
COLD
COLD
POWER CIRCUIT
JK9501
S-VIDEO IN
JK9502
AUDIO IN
VIDEO IN
JK9503
AUDIO OUT
JK1601
OPTICAL AUDIO OUT
U7001
UHF/ VHF TUNER/TV DEMODULATOR UNIT
FM
L1001
F1001
P1001
T1501
T1001
IC1501
IC1502
IC1503
IC1001
IC1002
IC9551
Q1001
Q1002
Q1501
Q1502
Q1503
Q1504
Q1505
Q1506
Q1051
Q1052
Q1053
Q1070
Q1071
Q1080
Q1081
Q9501
Q9502
Q9503
Q9504
Q7001
P1501
P1502
P1503
P1504
P1505
P1506
P1507
P1005
P1008
P1006
P1601
P7001
P7002
P7004
P7005
P7006
P7003
P7101
P9503
J1601
J1602
J1603
J1001
TP1509
TP1511
TP1001
TP1071
TP9501
TP9502
TP9551
TP9552
TP9553
TP9554
PR1001
PR1002
PR1070
PR1071
PR1501
PR1502

LSJB2066

POWER SUPPLY C.B.A. LSEP2066A
PV-DF2002

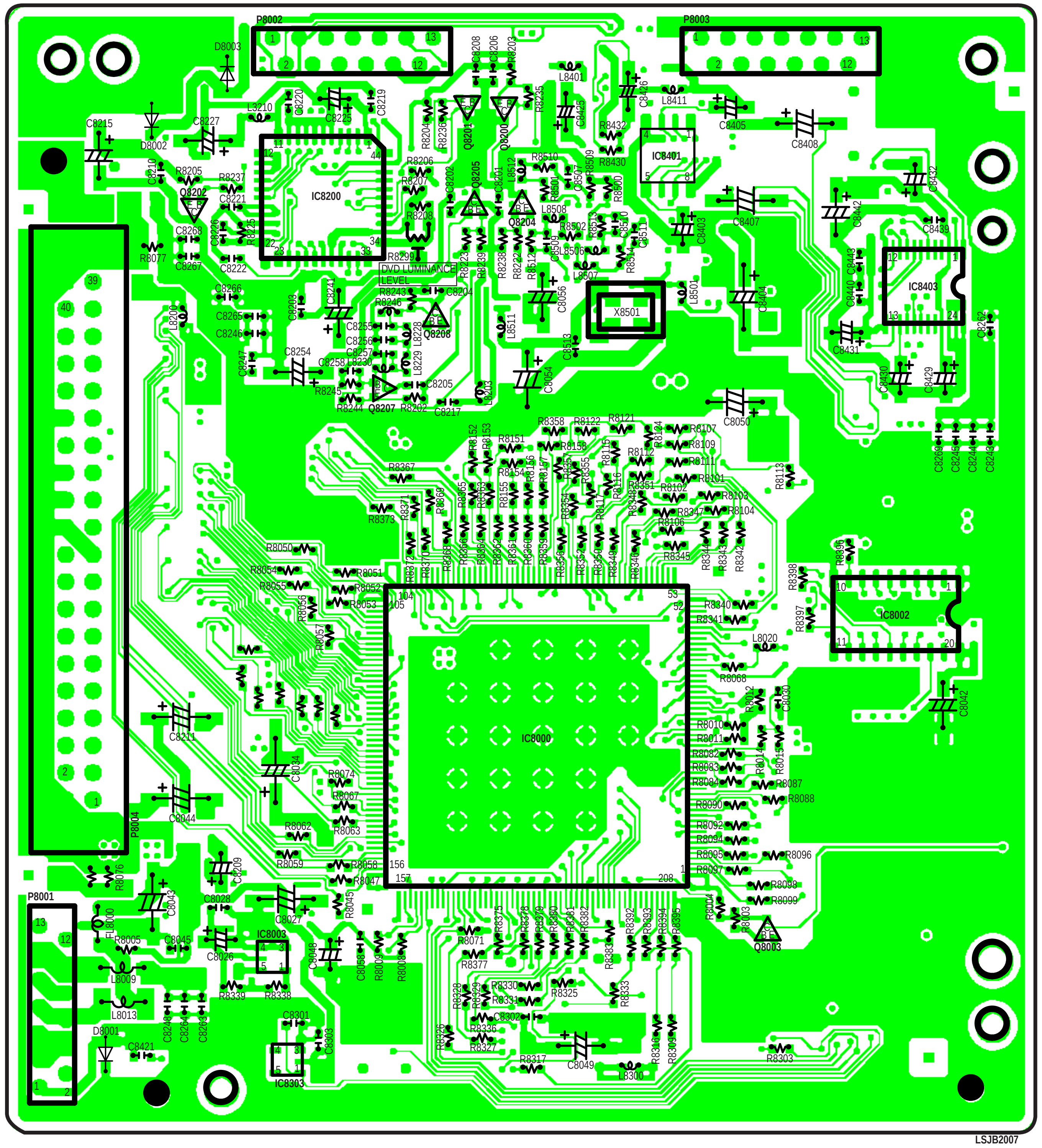
DVD DECODER C.B.A. LSEP2007B

NOTE: MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT PATETRNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

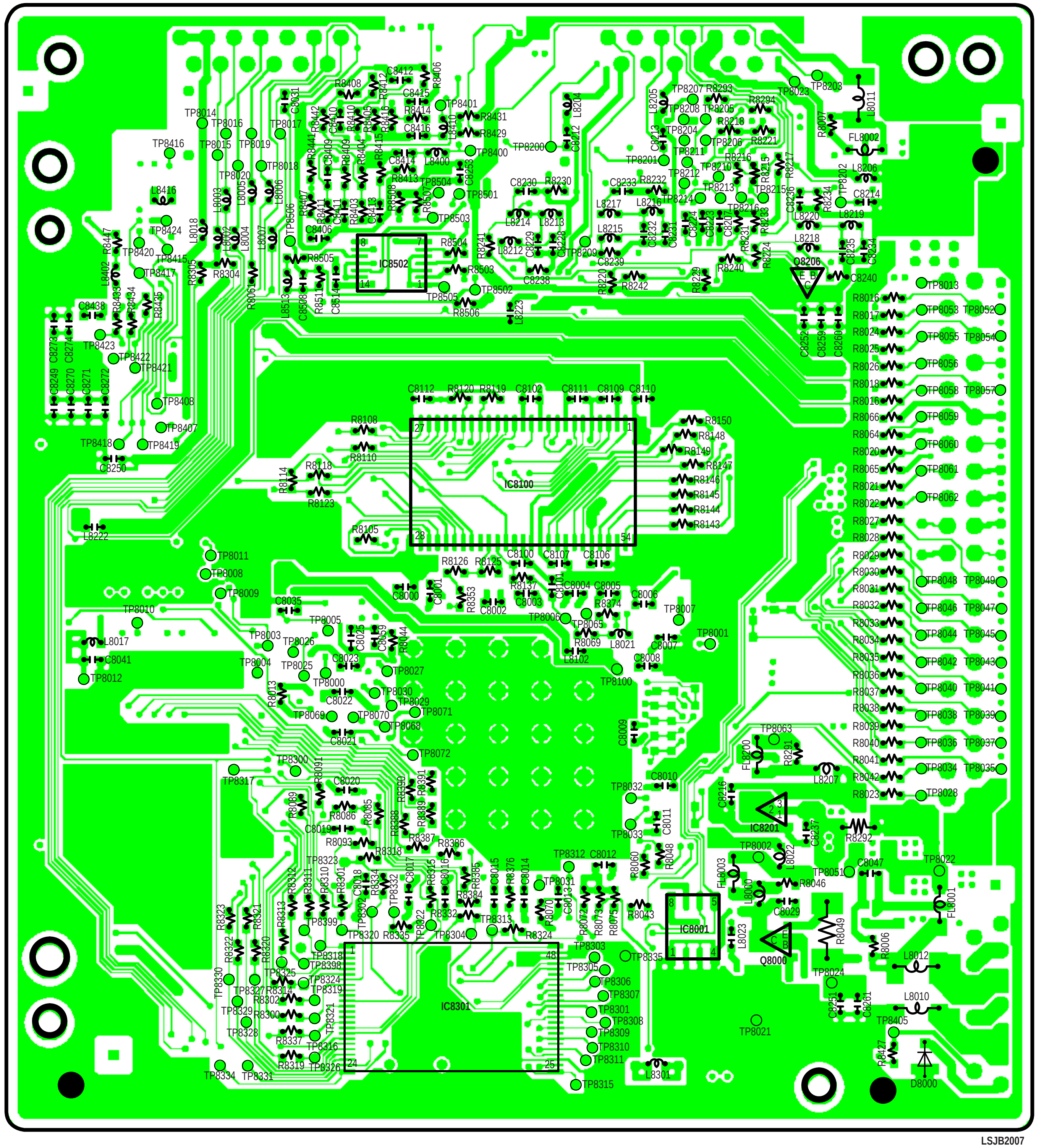
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

(COMPONENT SIDE)

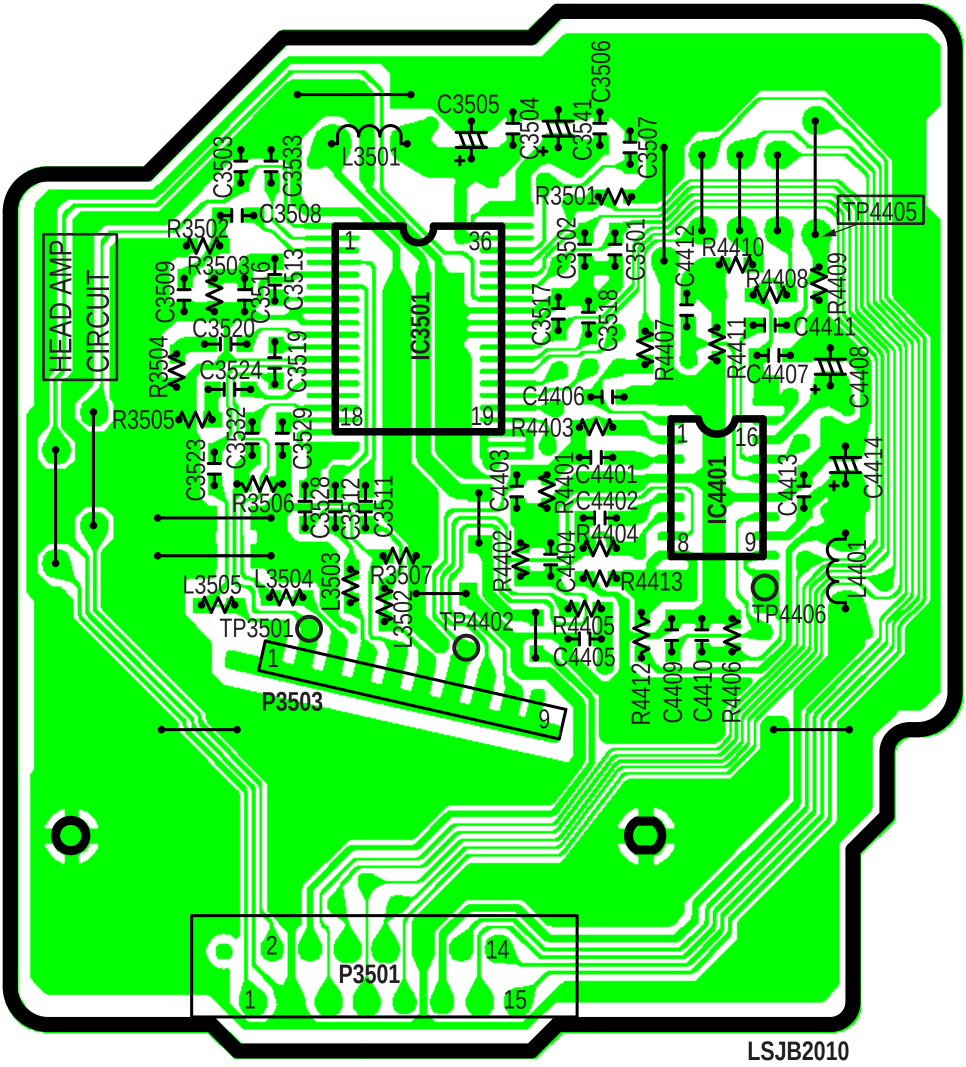

P8002
P8003
IC8200
IC8401
IC8403
X8501
DVD LUMINANCE LEVEL
IC8000
IC8002
IC8003
IC8303
P8001
P8004
Q8003
LSJB2007

(FOIL SIDE)


IC8502
IC8100
IC8201
IC8001
IC8301
Q8000
Q8206
D8000
LSJB2007

DVD DECODER C.B.A. LSEP2007B
PV-DF2002

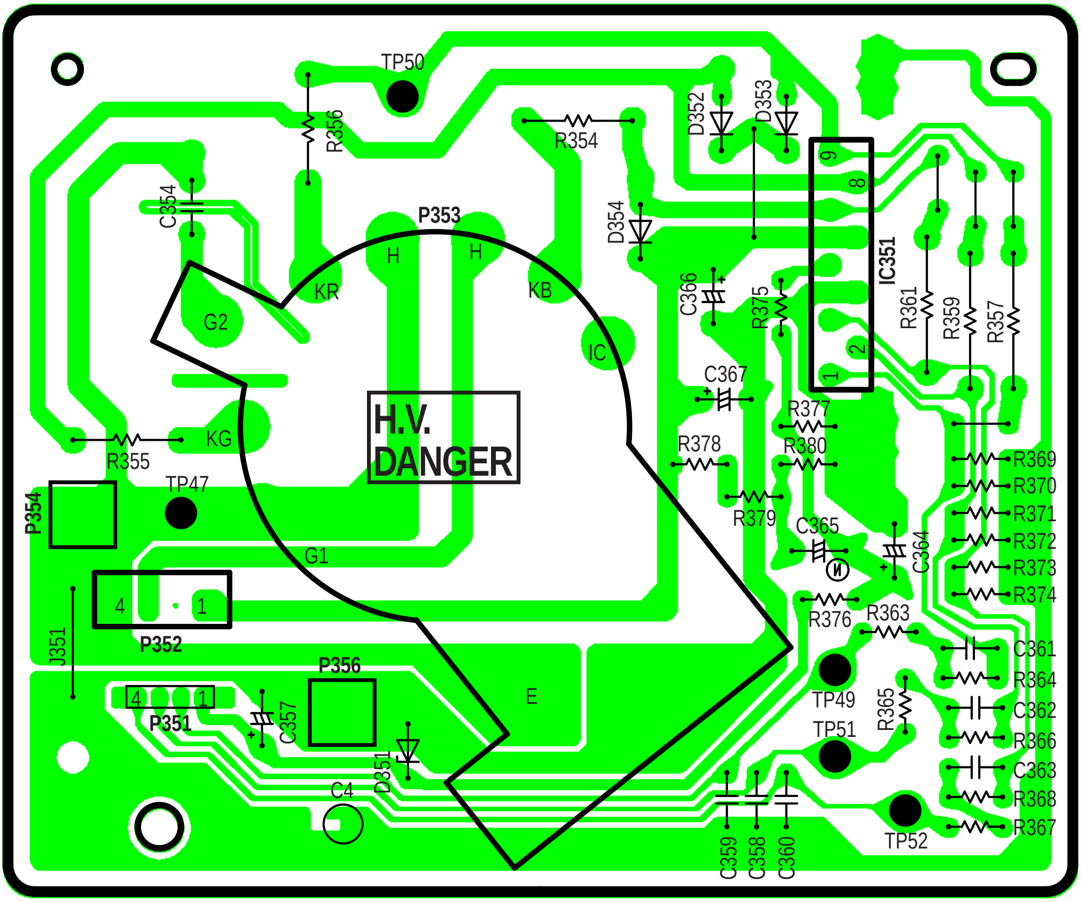
Hi-Fi HEAD AMP C.B.A. LSEP2010A


C3506
C3505
C3504
C3541
C3507
L3501
C3503
C3533
R3501
TP4405
C3508
R3502
1
36
C3502
C3501
C4412
R4410
HEAD AMP
CIRCUIT
R3503
C3509
C3516
C3513
R4408
R4409
IC3501
C3520
C3517
C3518
R4407
R4411
C4411
R3504
C3524
C3519
C4407
C4408
C4406
R3505
18
19
R4403
1
16
C3523
C3532
C3529
C4403
R4401
C4401
IC4401
C4413
C4414
R3506
C3528
C3512
C3511
C3531
C4402
R4404
8
9
R4402
C4404
R4413
L4401
L3505
L3504
L3503
R3507
TP4406
L3502
TP3501
TP4402
R4405
C4405
1
P3503
9
R4412
C4409
C4410
R4406
2
14
P3501
1
15
LSJB2010

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

CAUTION: WHEN SERVICING THIS C.B.A., AVOID TOUCHING HIGH VOLTAGE COMPONENTS.

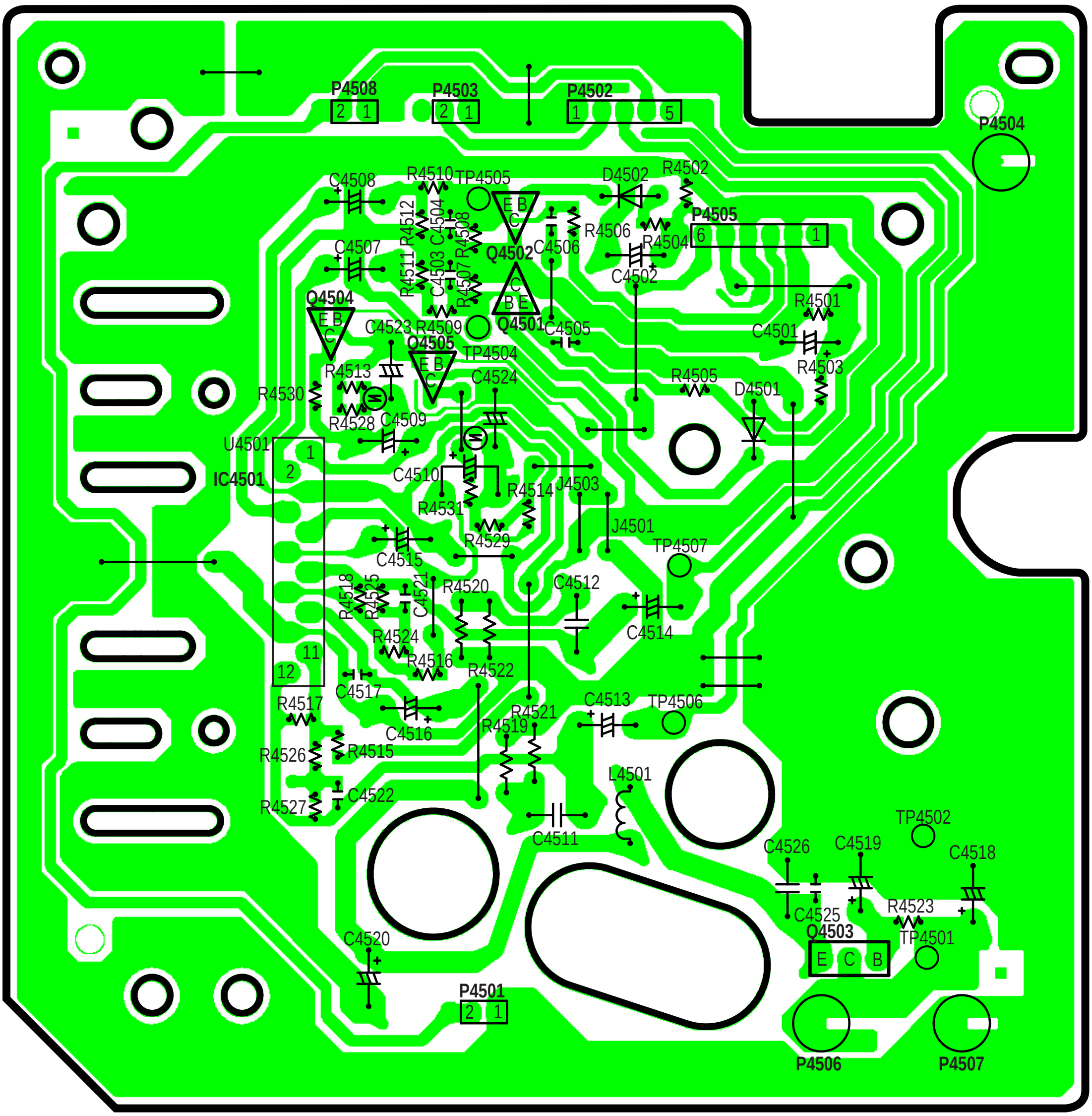

TP50
R356
R354
D352
D353
P353
H
H
KR
KB
G2
C354
D354
C366
R375
IC351
9
8
2
1
R361
R359
R357
IC
C367
R377
R380
R378
R379
C365
C364
H.V.
DANGER
KG
R355
TP47
P354
G1
4
1
P352
J351
R369
R370
R371
R372
R373
R374
R376
R363
C361
R364
C362
R366
C363
R368
R367
P356
E
TP49
TP51
R365
P351
C357
D351
C4
C359
C358
C360
TP52

LRP63013

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

AUDIO AMP C.B.A. VEPS4039A


P4508
2 1
P4503
2 1
P4502
1 5
P4504
C4508
R4510
TP4505
D4502
R4502
P4505
6 1
R4512
C4504
R4508
E B C
Q4502
C4506
R4506
R4504
C4507
R4511
C4503
R4507
C4502
Q4504
E B C
C B E
Q4501
R4501
C4523
R4509
C4505
C4501
Q4505
E B C
TP4504
R4503
R4513
C4524
R4505
D4501
R4530
R4528
C4509
U4501
IC4501
1
2
C4510
R4514
J4503
R4531
J4501
R4529
TP4507
C4515
R4518
R4525
C4521
R4520
C4512
C4514
R4524
R4516
R4522
11
12
C4517
R4517
C4516
R4521
C4513
TP4506
R4519
R4526
R4515
R4527
C4522
L4501
C4511
TP4502
C4526
C4519
C4518
C4525
R4523
Q4503
TP4501
E C B
C4520
P4501
2 1
P4506
P4507

VJBS4039

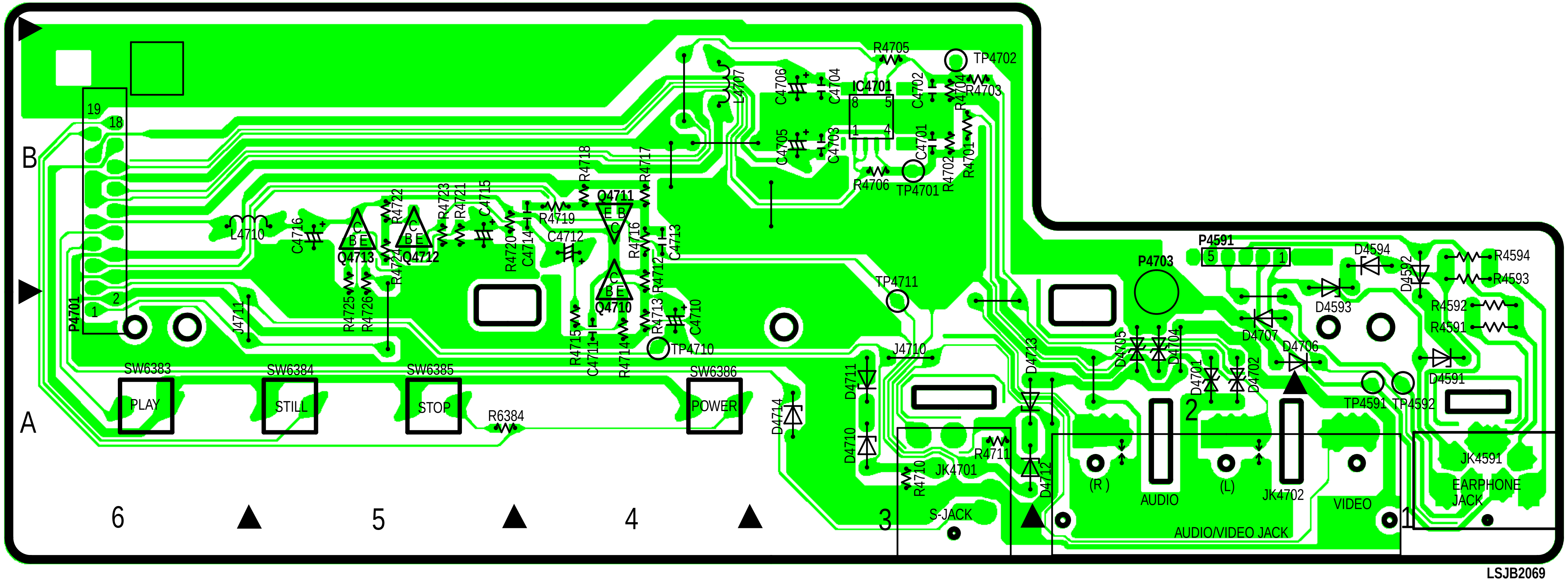
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

OPERATION C.B.A. LSEP2069A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.


B
A
6
5
4
3
2
1
19
18
2
1
P4701
L4710
C4716
Q4713
Q4712
R4722
R4724
R4725
R4726
R4723
R4721
C4715
R4720
C4714
R4719
C4712
R4718
Q4711
R4717
R4716
R4712
C4713
Q4710
R4715
C4711
R4714
R4713
C4710
TP4710
J4711
L4707
C4706
C4705
C4704
C4703
IC4701
8
5
1
4
C4702
C4701
R4705
TP4702
R4704
R4703
R4701
R4702
R4706
TP4701
TP4711
J4710
D4714
D4711
D4710
D4713
D4712
R4710
R4711
JK4701
S-JACK
P4703
D4705
D4704
D4701
D4702
D4707
D4706
P4591
D4594
D4593
D4592
R4594
R4593
R4592
R4591
D4591
TP4591
TP4592
(R)
(L)
AUDIO
JK4702
VIDEO
AUDIO/VIDEO JACK
JK4591
EARPHONE JACK
SW6383
PLAY
SW6384
STILL
SW6385
STOP
R6384
SW6386
POWER
LSJB2069

Panasonic®

TV/DVD/VCR Combination
Operating Instructions

Models No. PV-DF2002/PV-DF2702

- Initial Setup and Connection Procedures are on pages 14 to 17.

As an ENERGY STAR® Partner, Matsushita Electric Corporation of America has determined that this product or product model meets the ENERGY STAR® guidelines for energy efficiency.

Please read these instructions carefully before attempting to connect, operate, or adjust this product. Please save this manual.
Spanish Quick Use Guide is included.
(Guía para rápida consulta en español está incluida.)

LSQT0521A

For assistance, please call : 1-800-211-PANA(7262) or send e-mail to : consumerproducts@panasonic.com

Initial Setup
Basic Operation
TV Operation
Timer Operation
Advanced Operation
For Your Information

Important Safeguards and Precautions

READ AND RETAIN ALL SAFETY AND OPERATING INSTRUCTIONS. HEED ALL WARNINGS IN THE MANUAL AND ON UNIT

INSTALLATION

1 POWER SOURCE CAUTION

Operate only from power source indicated on unit or in this manual. If uncertain, have your Electric Utility Service Company or Video Products Dealer verify your home power source.

2 POWER CORD PLUG

For safety, this unit has a polarized type plug (one wide blade), or a three-wire grounding type plug. Always hold the plug firmly and make sure your hands are dry when plugging in or unplugging the AC power cord. Regularly remove dust, dirt, etc. on the plug.

POLARIZED PLUG CAUTION:

The plug fits into outlet one way. If it cannot be fully inserted, try reversing it. If it still will not fit, have an electrician install the proper wall outlet. Do not tamper with the plug.

GROUNDING PLUG CAUTION:

The plug requires a three-hole grounding outlet. If necessary, have an electrician install the proper outlet. Do not tamper with the plug.

3 POWER CORD

To avoid unit malfunction, and to protect against electrical shock, fire or personal injury:

- Keep power cord away from heating appliances and walking traffic. Do not rest heavy objects on, or roll such objects over the power cord.
- Do not tamper with the cord in any way.
- An extension cord should have the same type plug (polarized or grounding) and must be securely connected.
- Overloaded wall outlets or extension cords is a fire hazard.
- Frayed cords, damaged plugs, and damaged or cracked wire insulation are hazardous and should be replaced by a qualified electrician.

4 DO NOT BLOCK VENTILATION HOLES

Ventilation openings in the cabinet release heat generated during operation. If blocked, heat build-up may result in a fire hazard or heat damage to cassettes or discs.

For your protection:

a. Never cover ventilation slots while unit is ON, or operate unit while placed on a bed, sofa, rug, or other soft surface.

b. Avoid built-in installation, such as a book case or rack, unless properly ventilated.

5 AVOID EXTREMELY HOT LOCATIONS OR SUDDEN TEMPERATURE CHANGES

Do not place unit over or near a heater or radiator, in direct sunlight, inside closed vehicles, in high temperature [over 95°F (35°C)], or in over 75% humidity. If unit is suddenly moved from a cold place to a warm one, moisture may condense in unit and on the tape causing damage. Never subject unit to vibration, impact, or place it so that the surface is tilted as internal parts may be seriously damaged.

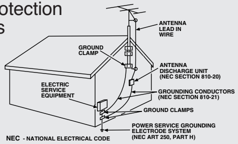
6 TO AVOID PERSONAL INJURY

- Never place unit on support or stand that is not firm, level, and adequately strong. The unit could fall causing serious injury to a child or adult and damage to the unit.
- Move any appliance and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause objects to overturn.
- Carefully follow all operating instructions.

OUTDOOR ANTENNA INSTALLATION

1 SAFE ANTENNA AND CABLE CONNECTION

An outside antenna or cable system must be properly grounded to provide some protection against built up static charges and voltage. Section 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, part 1 of the Canadian Electrical Code) provides information regarding proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC - NATIONAL ELECTRICAL CODE

2 KEEP ANTENNA CLEAR OF HIGH VOLTAGE POWER LINES OR CIRCUITS

Locate an outside antenna system well away from power lines and electric light or power circuits so it will never touch these power sources should it ever fall. When installing antenna, absolutely never touch power lines, circuits or other power sources as this could be fatal.

USING THE UNIT

Before unit is brought out of storage or moved to a new location, refer again to the INSTALLATION section of these safeguards.

1 KEEP UNIT WELL AWAY FROM WATER OR MOISTURE, such as vases, sinks, tubs, etc.

2 IF EXPOSED TO RAIN, MOISTURE, OR STRONG IMPACT, unplug unit and have it inspected by a qualified service technician before use.

3 ELECTRICAL STORMS

During a lightning storm, or before leaving unit unused for extended periods of time, disconnect all equipment from the power source as well as the antenna and cable system.

4 WHEN UNIT IS PLUGGED IN

• DO NOT OPERATE IF:
- liquid has spilled into unit.
- unit was dropped or otherwise damaged.
- unit emits smoke, malodors, or noises.

Immediately unplug unit, and have it inspected by a service technician to avoid potential fire and shock hazards.

- Never drop or push any object through openings in unit. Touching internal parts may cause electric shock or fire hazard. Do not put any foreign object on the tray.
- Keep magnetic objects, such as speakers, away from unit to avoid electrical interference.

5 USING ACCESSORIES

Use only accessories recommended by the manufacturer to avoid risk of fire, shock, or other hazards.

6 CLEANING UNIT

Unplug unit. Use a clean, dry, chemically untreated cloth to gently remove dust or debris. DO NOT USE cleaning fluids, aerosols, or forced air that could over-spray, or seep into unit and cause electrical shock. Any substance, such as wax, adhesive tape, etc. may mar the cabinet surface. Exposure to greasy, humid, or dusty areas may adversely affect internal parts.

SERVICE

1 DO NOT SERVICE PRODUCT YOURSELF

If, after carefully following detailed operating instructions, the unit does not operate properly, do not attempt to open or remove covers, or make any adjustments not described in the manual. Unplug unit and contact a qualified service technician.

2 REPLACEMENT OF PARTS

Make sure the service technician uses only parts specified by the manufacturer, or have equal safety characteristics as original parts. The use of unauthorized substitutes may result in fire, electric shock, or other hazards.

3 SAFETY CHECK AFTER SERVICING

After unit is serviced or repaired, request that a thorough safety check be done as described in the manufacturer's service literature to insure video unit is in safe operating condition.

Safety Precautions/Mesures de sécurité

Warning : **To prevent fire or shock hazard, do not expose this equipment to rain or moisture.**

Caution : **To prevent electric shock, match wide blade of plug to wide slot, fully insert.**

Avertissement : **Afin de prévenir tout risque d'incendie ou de chocs électriques, ne pas exposer cet appareil à la pluie ou à une humidité excessive.**

Attention : **Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.**

FCC WARNING : Any unauthorized changes or modifications to this equipment would void the user's authority to operate.

CAUTION:
UNIT IS A CLASS I LASER PRODUCT.
HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE UNIT CORRECTLY AS INSTRUCTED.

WHEN THIS UNIT IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT ATTEMPT TO REPAIR THE UNIT YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

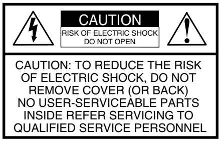
CAUTION:
LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM.

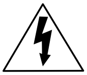
ATTENTION:
RAYONNEMENT LASER EN CAS D'OUVERTURE. NE PAS REGARDER DANS LE FAISCEAU.

(Inside of product)

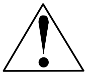
FCC NOTICE:
This equipment has been tested and found to comply with part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential environment. If this eqiupment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver. If necessary, consult the dealer or an experienced radio/TV technician for help. You may find the booklet, 'Something About Interference' available from FCC local regional offices helpful.

This product utilizes both a Cathode Ray Tube (CRT) and other components that contain lead. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <http://www.eiae.org.>


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

Region Management Information

Region Management Information: This unit is designed and manufactured to respond to the Region Management Information that is recorded on a DVD disc. If the Region number described on the DVD disc does not correspond to the Region number of this unit, this unit cannot play this disc.

The Region number for this unit is 1.

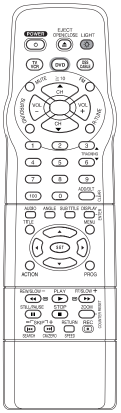
Before Using

Congratulations

on your purchase of one of the most sophisticated and reliable products on the market today. Used properly, it will bring you and your family years of enjoyment. Please fill in the information below. The serial number is on the tag located on the back of your unit.

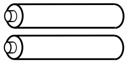
Date of Purchase ______________
Dealer Purchased From ______________
Dealer Address ______________
Dealer Phone No. ______________
Model No. ______________
Serial No. ______________

Accessories


POWER
EJECT
OPEN/CLOSE
LIGHT
TV/VCR
DVD
DBS/CABLE
MUTE
CH
VOL
SURROUND
FM
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM/ZERO
SPEED
COUNTER RESET

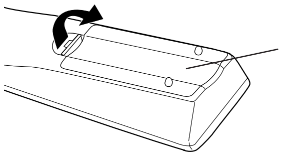
☐ Remote Control LSSQ0302

☐ Batteries 2 “AA”

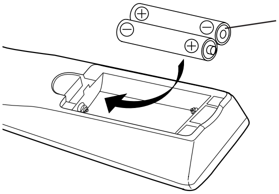


To order accessories, call toll free 1-800-332-5368.

Loading the Batteries



1) Open the cover.



2) Insert batteries as marked.

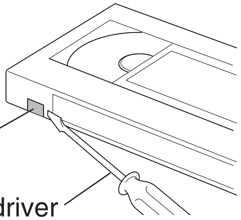
3) Close the cover.

☐ Battery replacement caution

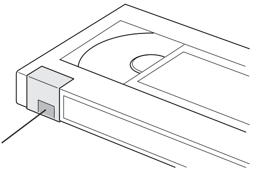
- Do not mix old and new batteries.
- Do not mix alkaline with manganese batteries.

Prevent Accidental Tape Erasure

Break off the tab to protect.


Record Tab
Screw driver

To record again.



Cover the hole with cellophane tape.

Record/Playback Time

Only use tapes with the VHS mark in this unit.

Tape Speed Setting	Type of Video Cassette		
	T60	T120	T160
SP (Standard Play)	1 Hour	2 Hours	2 Hours 40 Minutes
LP (Long Play)	2 Hours	4 Hours	5 Hours 20 Minutes
SLP (Super Long Play)	3 Hours	6 Hours	8 Hours

Table of Contents

Initial Setup

TV / VCR

Important Safeguards and Precautions / Safety Precautions........ 2 - 3
Before Using 4
Information (Unit, Cassette, Disc) .... 6 - 7
Location of Controls.. 8 - 10
Connections .... 11 - 13
Initial Setup 14, 15
Reset Language, Channels, Clock, Time Zone Adjust 16, 17

Basic Operation

TV / VCR

Playback a Tape 18
Record On a Tape 18
Copy Your Tapes (Dubbing)... 19

DVD

Basic DVD Operation 20, 21

TV Operation

TV / VCR

TV Operation 22
MTS Broadcast / TV Stereo System 23
Closed Caption System 24, 25
TV Timer Features 26
On-Screen Display (OSD) 27
FM Radio.. 28, 29

Timer Operation

TV / VCR

Timer Recording... 30, 31

Advanced Operation

TV / VCR

Cable Box Universal Remote Control Feature 32, 33
Tape Operation .... 34 - 37
Special VCR Features 38, 39
V-Chip Control Feature .... 40 - 43
Audio Features 44, 45
Video / Audio Menu 46
Video / Audio Adjustment 47

DVD

Disc Operation .... 48 - 51
MP3 Playback Operation 52
DVD Operation using On-Screen Displays .... 53 - 55
DVD Lock Feature 56

For Your Information

TV / VCR

Before Requesting Service... 60, 61
Warning and Instruction Displays.. 62
Spanish Quick Use Guide / Guía para rápida consulta .... 65 - 71
Index 72, 73
Limited Warranty 74
Customer Services Directory 75

DVD

Settings for DVD Operation.. 57 - 59
Language Code List 63

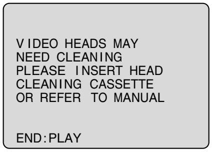
Information (Unit, Cassette, Disc)

Head Cleaning

Playing older or damaged tapes may eventually cause video heads to become clogged.

Head Clog Sensor

During playback this screen appears if clogging is detected. To remove screen, press PLAY on the remote or unit.



```
VIDEO HEADS MAY
NEED CLEANING
PLEASE INSERT HEAD
CLEANING CASSETTE
OR REFER TO MANUAL

END:PLAY
```

- **Use “dry” type head cleaning cassette only.** (Part No. NV-TCL30PT is recommended.)
- Follow cleaning tape directions carefully. Excessive use of head cleaning tape can shorten the video head life.
- If head clog symptoms persist, contact your nearest Factory Service Center or authorized Service Center. (See Page 64.)

DST (Daylight Saving Time)

Unit auto adjusts clock for DST (Daylight Saving Time.)

■ **Spring (First Sunday in April)**

DST : ON ➔ Sets clock ahead one hour.

Autumn (Last Sunday in October)

■ DST : ON ➔ Turns clock back one hour.

- If your area does not observe Daylight Saving Time, select DST : OFF (see “Clock” on pages 16 and 17).
- Keep these time changes in mind when programming the unit for timer recordings.

Features for a Quality Picture

Digital Auto Tracking

Continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control (to reduce picture noise)

Use during Playback and Slow Motion mode to reduce picture noise. Press the 3 or 6 number key on the remote control or CH ▲▼ on the unit until the picture clears up. To return to Auto Tracking, press POWER off, then on again a few seconds later.

V-Lock Control

In Still mode, the 3 or 6 number key on the remote control or CH ▲▼ on the unit operate as a V-Lock control to reduce jitter.

PanaBlack™ Picture Tube (PV-DF2702 only)

This unit uses a PanaBlack™ picture tube for better color reproduction and picture contrast.

Velocity Modulated Scan (PV-DF2702 only)

This advanced circuitry senses video signal transitions from dark-to-light. The black-and-white portions of the signal speed up and slow down as needed, giving you sharp dark-to-light transitions and outstanding edge definition.

3 Line Digital Comb Filter

Provides an extremely accurate means of separating color from black-and-white in the video signal. Three channels of picture data, the filter removes both horizontally and vertically hanging dots, as well as dot crawl.

Specifications

Display	
Picture Tube:	27 inch diagonal pure flat Picture Tube (PV-DF2702) 20 inch diagonal pure flat Picture Tube (PV-DF2002)
VCR	
Video Recording System:	4 rotary heads helical scanning system
Audio Track:	1 track (Normal) 2 channel (Hi-Fi Audio Sound)
Tuner	
Broadcast Channels:	VHF 2 ~ 13, UHF 14 ~ 69
CABLE Channels:	Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
FM Radio	
Band range:	87.5 ~ 108.1 MHz
General	
Power Source:	120V AC, 60 Hz
Power Consumption:	Power On Approx. 174 watts (PV-DF2702) Approx. 128 watts (PV-DF2702) Power Off Approx. 3.5 watts
Television System:	EIA Standard NTSC color
Speaker:	2 pieces
Operating Temperature:	5˚ C ~ 35˚ C (41˚ F ~ 95˚ F)
Operating Humidity:	10 % ~ 75%
Weight:	52 kg (114.4 lbs.) (PV-DF2702) 29 kg (63.8 lbs.) (PV-DF2002)
Dimensions:	760 (W) x 651 (H) x 503 (D) mm 29-7/8” (W) x 25-5/8” (H) x 29-7/8” (D) (PV-DF2702) 604 (W) x 523 (H) x 503 (D) mm 23-3/4” (W) x 20-5/8” (H) x 19-3/4” (D) (PV-DF2002)
Discs played	
(1) DVD-VIDEO disc	5” (12 cm) single-sided, single-layer 5” (12 cm) single-sided, double-layer 5” (12 cm) double-sided, double-layer (one layer per side) 3” (8 cm) single-sided, single-layer 3” (8 cm) single-sided, double-layer 3” (8 cm) double-sided, double-layer (one layer per side)
(2) Compact disc (CD-DA, CD-RW, VIDEO CD)	5” (12 cm) disc 3” (8 cm) disc
Digital audio output:	
Optical digital output:	Optical connector
Pickup:	Wave length: 655 nm (DVD) 790 nm (Video CD/CD) Laser power: CLASS II

Note : **Designs and specifications are subject to change without notice.**

Disc formats supported by this unit

The unit can play back discs bearing any of the following marks:

DVD
3” (8 cm) disc / 5” (12 cm) disc

Video CD
3” (8 cm) disc / 5” (12 cm) disc

CD, CD-R/W
3” (8 cm) disc / 5” (12 cm) disc

Discs which cannot be played with this unit

- DVD with Region No. other than “1” or “ALL”
- DVD of PAL system
- DVD-ROM
- DVD-R/DVD-RAM
- CD-ROM
- CDV
- CD-G

- **Do not try to play a Photo CD.**

DVD VIDEO is a registered trademark.

Definition of Terms

Angle
Some DVD discs feature scenes simultaneously shot from different angles. The ANGLE button can be used to view the scene from different angles. (ANGLE Indicator lights up on the unit when a scene recorded at different angles is detected.)

Chapter Number
Titles are subdivided into numbered sections. You can quickly search for a favorite scene using these numbers.

DVD
A high-density optical disc on which high-quality pictures and sound have been digitally recorded. DVD incorporates new video compression technology (MPEG II) and high-density recording technology which allow entire movies to be recorded with incredible playback quality.

Playback Control
With Video CD (version 2.0), scenes or information may be selected for viewing or listening from an interactive menu that appears on the TV screen.

Subtitles
Written dialogue which appears at the bottom of the screen.

Time Number
The elapsed play time from the start of a disc or title. Use to quickly find scenes. (May not work with some discs.)

Title Number
For DVD discs with two or more titles, the title is numbered as title 1, title 2, etc.

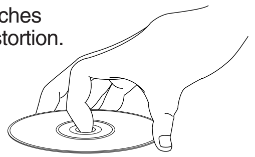
Track Number
Numbers assigned to tracks on Video CDs and CDs to allow specific tracks to be quickly located.

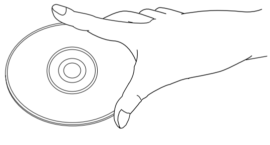
Video CD
CD containing picture and sound with same quality level as video tape. This unit also supports Video CDs with playback control (version 2.0).

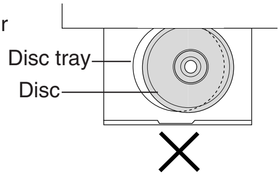
Disc Handling

Handling precautions

- Only hold disc by edges as shown. Fingerprints, dirt, and scratches can cause skipping and distortion.
- Do not write on label side of disc.
- Never use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.
- Be careful not to drop or bend disc.
- Do not place more than 1 disc on disc tray.
- Do not try to close disc tray when disc is not properly placed.
- Always store discs in their proper cases when not in use.

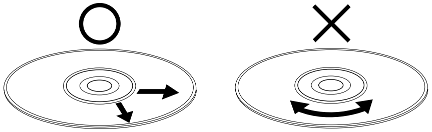






To clean disc surface

With a soft, damp (water only) cloth, gently wipe from the center hole to the outer edge as shown below. (Wiping in a circular pattern will scratch the surface.)



If disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe away moisture with a soft, dry, lint-free cloth before using disc. (See above.)

Improper disc storage

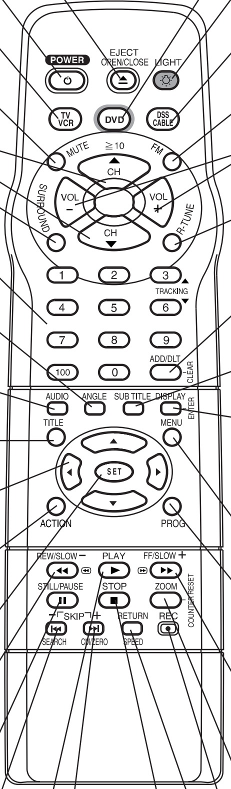
Discs could be damaged if stored or left in areas:
- exposed to direct sunlight.
- that are humid or dusty.
- near heat (i.e. heater, radiator, etc.).

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. Patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Location of Controls

Remote Control Buttons


POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
CLEAR
100
0
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
− SKIP +
RETURN
REC
SEARCH
CM/ZERO
SPEED

EJECT/OPEN/CLOSE
See next page.

POWER
Turn the unit on or off.

TV/VCR
Sets to TV or VCR mode.

MUTE
Mutes the sound instantly.

CHANNEL UP/DOWN
Selects a channel.

SURROUND
Hears a deeper, 3-D sound effect.

NUMBER Keys
Selects a channel directly.

ANGLE
Selects the desired angle in DVD mode.

AUDIO
Selects the desired audio mode.

TITLE
Selects the desired title by number on some DVDs.

SELECT ▲▼◀▶
Control navigation around on-screen menu.

ACTION
Displays Main Menu.

SET
Sets a selected menu.

REW/SLOW-
Rewinds tape and searches reverse scene. Decreases slow motion speed in Still mode.

STILL/PAUSE
Pauses picture in Play mode and frame advance picture in Still mode.

SKIP ⏮/SEARCH
Skips back one chapter or track. Goes to previous menu screen. Goes directly to the desired recording. Locates end point of recording.

PLAY
Begins playback.

SKIP ⏭/CM SKIP/ZERO SEARCH
Skips one chapter or track. Goes to next screen. In Stop mode, goes to the counter “0:00:00”. In Play mode, skips over 1 to 3 minutes of tape.

DVD
Sets to DVD mode.

LIGHT
See next page.

DSS/CABLE
Sets the remote to control some basic DDS or Cable box functions.

FM
Receives FM radio signal.

VOLUME UP/DOWN
Adjusts volume.

RAPID TUNE
Displays the last channel you were watching.

ADD/DELETE/CLEAR
Adds or deletes a channel. Cancels an item on the screen.

SUB TITLE
Selects a different subtitle language.

DISPLAY/ENTER
Displays the TV status and clock. In DVD mode, displays disc and unit information. In DSS or CABLE mode, it may be necessary after channel selection.

MENU
Displays DVD menu.

PROGRAM
Displays SET PROGRAM screen. You can set Timer Program and On-Timer.

FF/SLOW+
Fast forwards tape and searches forward scene. Increases slow motion speed in Still mode.

ZOOM/COUNTER RESET
Enlarges specific portions of DVD picture. Resets to “0:00:00” at desired portion of tape.

REC
Records a program.

RETURN/SPEED
Returns to DVD menu screen. Selects recording speed of tape.

STOP
Stops playback.

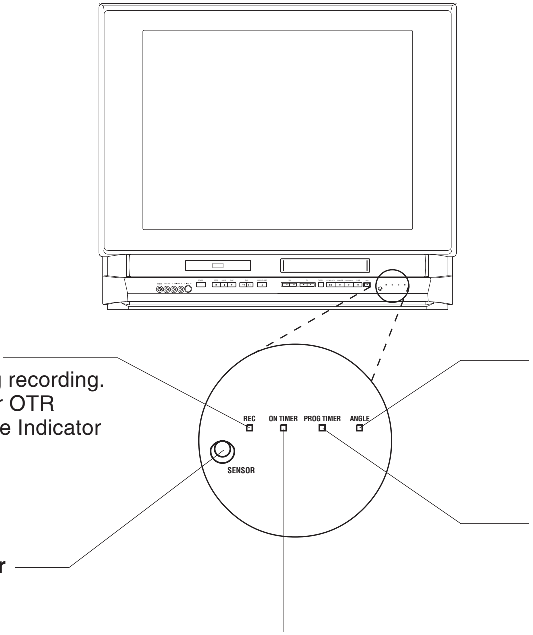
Location of Controls (continued)

Universal Light Tower® Illuminated Remote Control

LIGHT button:
When LIGHT is pressed, (DVD, $\overset{\text{TV}}{\text{VCR}}$, DSS/CABLE, CH UP/DOWN, VOL UP/DOWN) buttons will light for 5 seconds for easy button location.
If no button is pressed in 5 seconds, the light goes out to conserve the battery.

EJECT/OPEN/CLOSE button:
When this button is pressed in TV-VCR mode, the tape is ejected.
This button is inoperative if pressed during recording.
If pressed in DVD mode, the disc tray opens or closes.

Indicators on the Front Panel



REC Indicator
Lights up during recording.
In Rec Pause or OTR Pause mode, the Indicator flashes.
Pg. 18

Remote Sensor

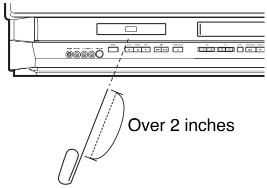
ON-TIMER Indicator
Lights up when the On Timer is set
Pg. 26

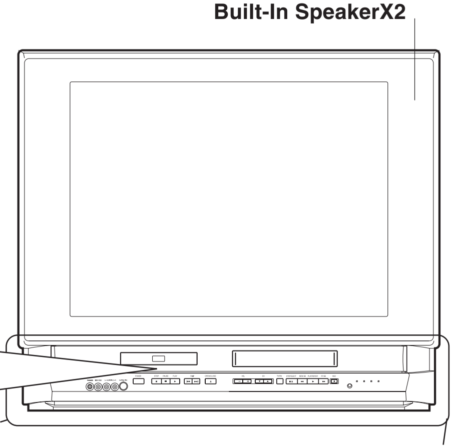
ANGLE Indicator
Lights up when a scene recorded at different angles is detected.
(DVD only).
Pg. 49

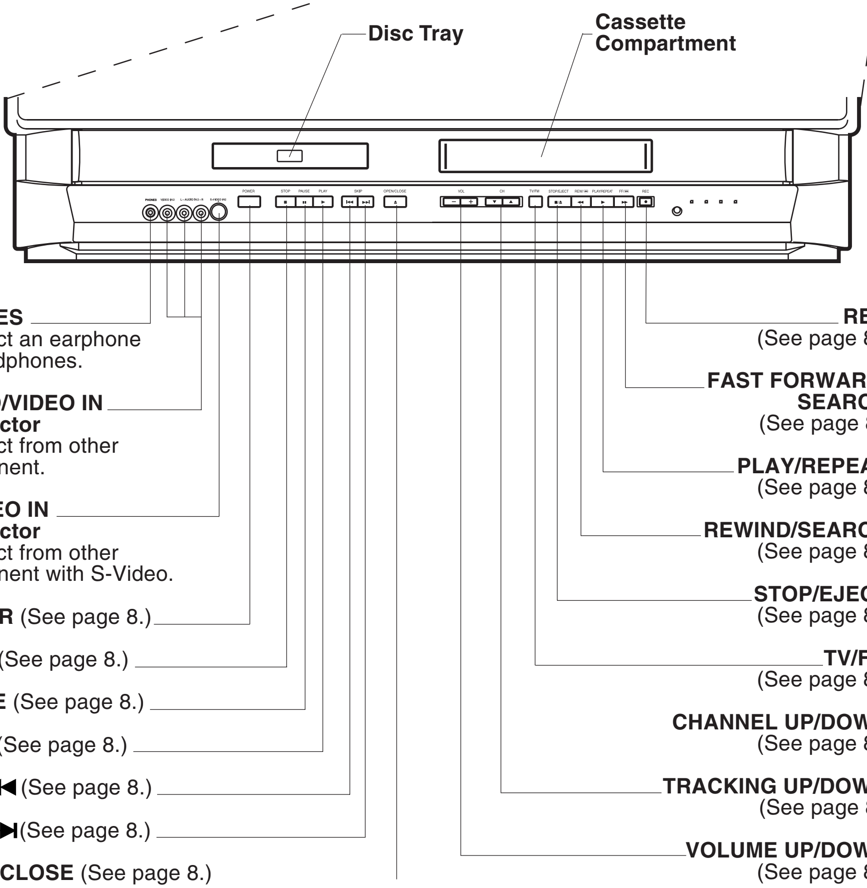
PROG TIMER Indicator
Lights up when the unit is set for Timer Recording. It flashes when a Timer Recording has been set with no tape inserted, the clock is not set, or the tape is in motion.
Pg. 30

Front View of the unit

If the disc cannot be removed...
First, unplug unit.
Then, prepare a rigid wire (e.g. an extended paper clip) and, applying moderate force, insert it straight into the hole at the base of the tray. The tray will eject a little. Now, pull the tray all the way out and remove the disc.


Over 2 inches


Built-In SpeakerX2


Disc Tray
Cassette Compartment
PHONES
VIDEO IN2
L • AUDIO IN2 • R
S-VIDEO IN2
POWER
STOP
PAUSE
PLAY
SKIP
OPEN/CLOSE
VOL
CH
TV/FM
STOP/EJECT
REW
PLAY/REPEAT
FF
REC

PHONES
Connect an earphone or headphones.

AUDIO/VIDEO IN Connector
Connect from other component.

S-VIDEO IN Connector
Connect from other component with S-Video.

POWER (See page 8.)

STOP (See page 8.)

PAUSE (See page 8.)

PLAY (See page 8.)

SKIP⏮ (See page 8.)

SKIP⏭ (See page 8.)

OPEN/CLOSE (See page 8.)

REC
(See page 8.)

FAST FORWARD/ SEARCH
(See page 8.)

PLAY/REPEAT
(See page 8.)

REWIND/SEARCH
(See page 8.)

STOP/EJECT
(See page 8.)

TV/FM
(See page 8.)

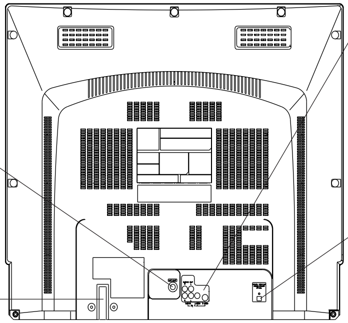
CHANNEL UP/DOWN
(See page 8.)

TRACKING UP/DOWN
(See page 8.)

VOLUME UP/DOWN
(See page 8.)

Location of Controls (continued)

Rear View of the unit



Audio Output Connector (L/R)
Pg. 12

VHF/UHF Antenna Input Terminal
See below.

Optical digital audio output connector
Pg. 13

AC Power Plug
When plugged into an AC outlet, this unit consumes 3.5 W of electric power in OFF condition.

Connections

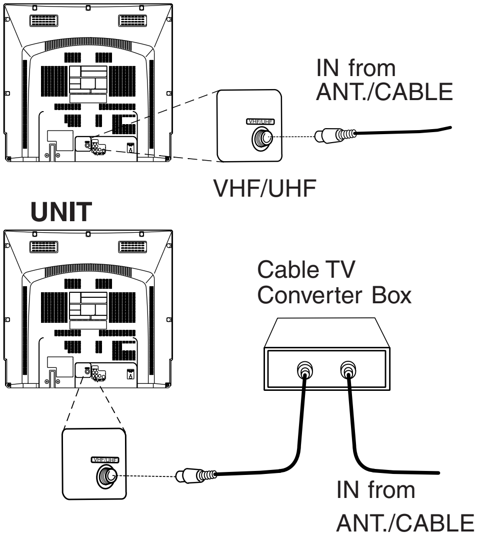
For ANT./Cable

Connect the cable from Antenna/Cable to the VHF/UHF terminal on the unit.

For DSS/Cable Box

Connect the OUT jack on your cable box to the VHF/UHF terminal on the unit with a RF cable.

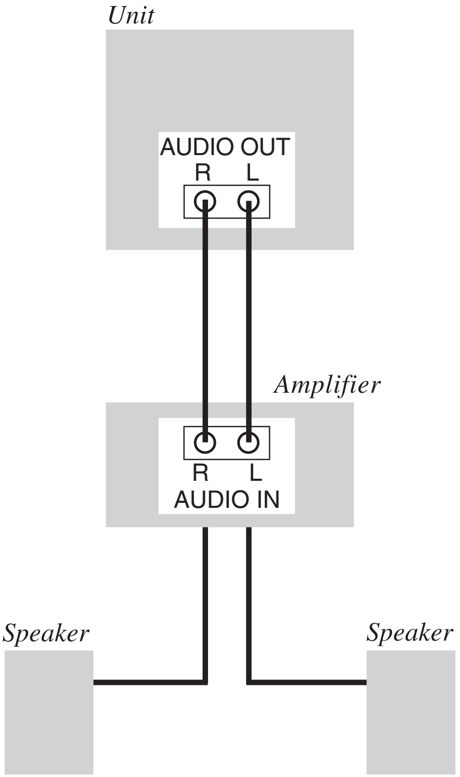
WARNING:
Overtightening “Nut type” RF coaxial cables may damage jacks. Finger tighten only.


IN from ANT./CABLE
VHF/UHF
VHF/UHF
UNIT
Cable TV Converter Box
VHF/UHF
IN from ANT./CABLE

Connections (continued)

Audio connections

■ Unit ➔ Amplifier ➔ Speaker



Manufactured under license from Dolby Laboratories. "Dolby", and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. © 1992-1997 Dolby Laboratories, Inc. All rights reserved.

☑ Ready Checklist

- ☐ Turn down the volume, then turn this unit, as well as other equipment to be connected, off before proceeding with connection.
- ☐ Do not block ventilation holes of any of the equipment and arrange them so that air can circulate freely.
- ☐ Read through the instructions before connecting other equipment.
- ☐ Ensure that you observe the color coding when connecting audio and video cables.

Enjoying digital audio output from the digital audio output connector

Notes on audio output from the optical digital audio output connector

Disc	Sound recording format	Optical digital audio output from connector
DVD	Dolby Digital	Dolby Digital bitstream (1-5.1 ch) or OFF (no output)*1
	Linear PCM (48/96 kHz 16/20/24 bit)	Linear PCM (2ch) (48 kHz sampling/16 bit only)*2 or no output*1
	dts	Bitstream or no output*1
Video CD	MPEG 1	PCM (44.1 kHz sampling)
CD	Linear PCM	Linear PCM (44.1 kHz sampling)

*1 The type of audio output from the connector can be selected by the Settings for DVD Operation. (See page 60.)

*2 Sound having 96 kHz sampling is converted into 48 kHz sampling when it is output from the unit's optical digital audio output connector.

For your reference:

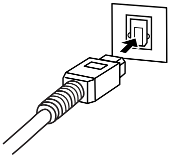
- Dolby Digital is a digital sound compression technique developed by the Dolby Laboratories Licensing Corporation. Supporting 5.1-channel surround sound, as well as stereo (2-channel) sound, this technique enables a large quantity of sound data to be efficiently recorded on a disc.
- Linear PCM is a signal recording format used in CDs. While CDs are recorded in 44.1 kHz/16 bit, DVDs are recorded in 48 kHz/16 bit up to 96 kHz/24 bit.
- If you have a Dolby Pro Logic Surround decoder, you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1 channel Dolby Digital soundtracks, as well as from titles with the Dolby Surround mark. For information on Panasonic or Technics Dolby Pro Logic Surround Sound Decoders please contact your local dealer.

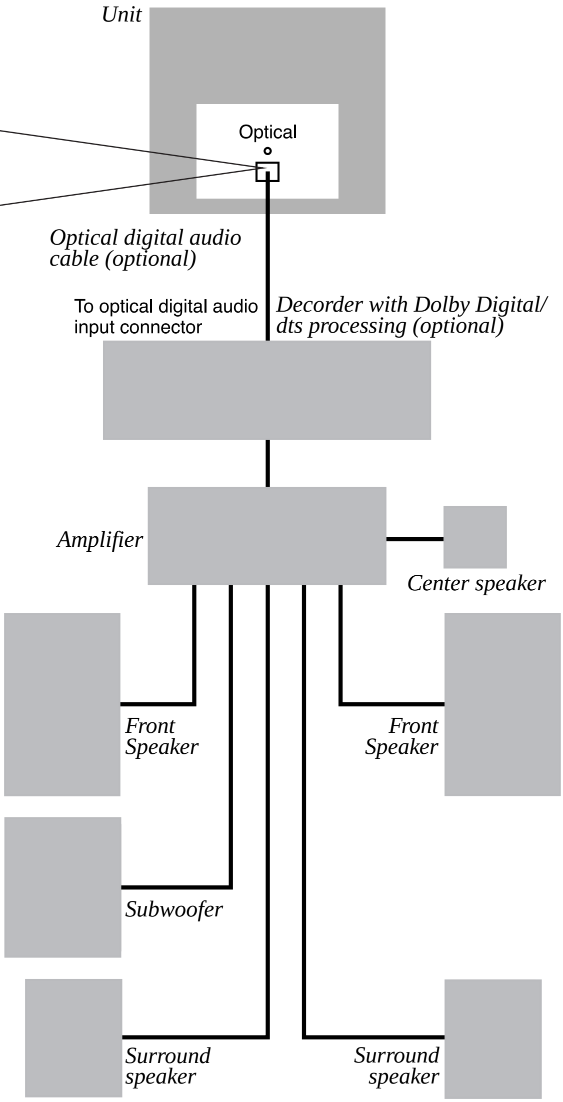
■ Unit ➔ Decoder with Dolby Digital ➔ Amplifier ➔ Speaker
or
dts (digital theater systems)

When DVDs recorded in Dolby Digital or dts are played, Dolby Digital bitstream or dts bitstream is output from the unit Optical digital audio output connector. When the unit is connected to a Dolby Digital decoder or dts decoder, you can enjoy theater-quality audio in your home.
[An optical digital audio cable (optional) is required when an optional Dolby Digital decoder or dts decoder is used.]

Notes on connecting an Optical digital audio cable (optional)

- Firmly connect the cable to the connector




Unit
Optical
Optical digital audio cable (optional)
To optical digital audio input connector
Decorder with Dolby Digital/ dts processing (optional)
Amplifier
Center speaker
Front Speaker
Front Speaker
Subwoofer
Surround speaker
Surround speaker

Caution for optical digital audio output connector:

- When connecting an amplifier (with an Optical digital input connector) which does not contain the Dolby Digital or dts decoder, be sure to select “OFF” at “Dolby Digital” and “OFF” at “dts” of the Settings for DVD Operation “AUDIO OUTPUT” (see page 58). Otherwise, any attempt to play DVDs may cause such a high level of noise that it may be harmful to your ears and damage your speakers.
- When a dts decoder is connected, please select “Bitstream” at “dts” of the Settings for DVD Operation “AUDIO OUTPUT”. If “OFF” is selected, there will be no sound. (See page 58).
- Video CDs and CDs can be played as normal.

Note:

- Some dts decoders which do not support DVD-dts interface may not work properly with the unit.

Initial Setup (Ready to Play)

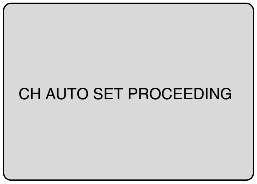
Please make all cable or antenna connections before powering on.

Initial Setup (Ready to Play)

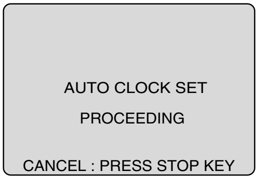
Press TV VCR on the remote for TV-VCR mode.

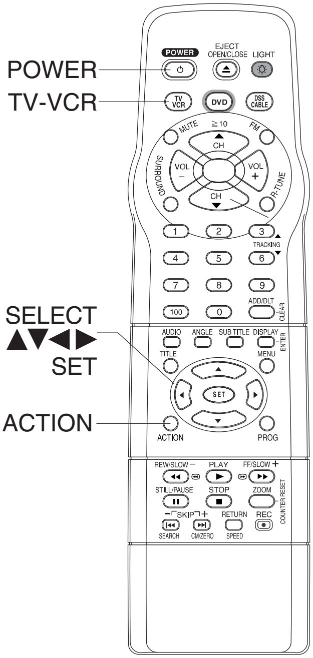
1 Plug the unit power cord into an AC wall outlet.

2 Press Power* on the remote or unit. The unit comes on and auto channel and clock set starts.

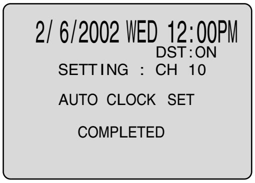

CH AUTO SET PROCEEDING

- If you use a cable box, turn it on and set it to the Public Broadcasting Service (PBS) channel in your time zone. If you use a DSS receiver, it must be turned off.

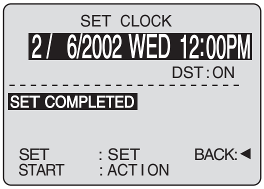

AUTO CLOCK SET
PROCEEDING
CANCEL : PRESS STOP KEY


POWER
TV-VCR
SELECT
▲▼◀▶
SET
ACTION
POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM/ZERO
SPEED

3 Settings are made automatically. When setup is done, this screen appears.


2/ 6/2002 WED 12:00PM
DST:ON
SETTING : CH 10
AUTO CLOCK SET
COMPLETED

If AUTO CLOCK SET IS INCOMPLETE screen appears, set the clock using MANUAL CLOCK SET procedure on next page.

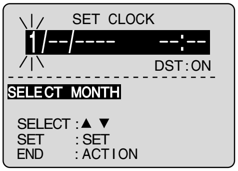

SET CLOCK
2/ 6/2002 WED 12:00PM
DST:ON
SET COMPLETED
SET : SET BACK:◀
START : ACTION

portant: If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

anual Clock Set

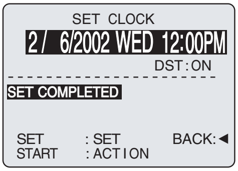
UTO CLOCK SET was incomplete, manually the clock as follows.

Press ACTION on the Remote to display SET CLOCK Menu screen.



SET CLOCK
1/--/---- --:--
DST:ON
SELECT MONTH
SELECT :▲ ▼
SET : SET
END : ACTION

Press ▲ ▼ to select the month and **press SET** set. In the same manner, select and set the date, year, time, and DST. (Daylight Saving Time)

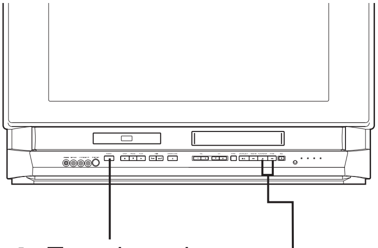


SET CLOCK
2/ 6/2002 WED 12:00PM
DST:ON
SET COMPLETED
SET : SET BACK:◀
START : ACTION

Press ACTION twice to start CLOCK and exit.

Reset all unit Memory Functions

When moving unit to a new location, or if a mistake was made in the Initial Setup section.
- Make sure a tape is not inserted in the unit.

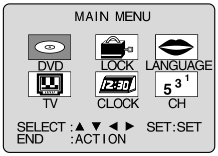


1. Turn the unit Power on.
2. Press and hold both **PLAY** and **FF** on the unit for more than 5 seconds.
   - The power will shut off.
   - Please ignore "NO CASSETTE" warning.
3. Do "Initial Setup" on page 14.

Note to CABLE System Installer
This reminder is provided to call the CABLE (Cable TV) System Installers attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Reset Language, Channels, Clock,

1

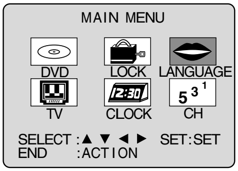

MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET:SET
END :ACTION

Press ACTION*
to display MAIN MENU.

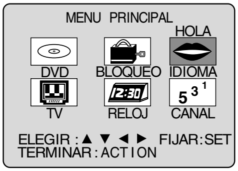
2

■ Language

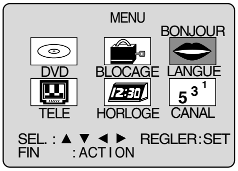
1) **Press ▲▼◀ ▶** to select language icon.


MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET:SET
END :ACTION

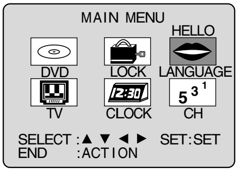
2) **Press SET** repeatedly.


MENU PRINCIPAL
HOLA
DVD
BLOQUEO
IDIOMA
TV
RELOJ
CANAL
ELEGIR : ▲ ▼ ◀ ▶
FIJAR:SET
TERMINAR : ACTION

For Spanish


MENU
BONJOUR
DVD
BLOCAGE
LANGUE
TELE
HORLOGE
CANAL
SEL. : ▲ ▼ ◀ ▶
REGLER:SET
FIN :ACTION

For French

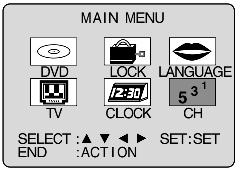

MAIN MENU
HELLO
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET:SET
END :ACTION

For English

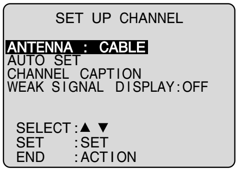
3) **Press ACTION** to exit.

■ Channels

1) **Press ▲▼◀ ▶** to select "CH."


MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET:SET
END :ACTION

2) **Press SET.**



```
SET UP CHANNEL

ANTENNA : CABLE
AUTO SET
CHANNEL CAPTION
WEAK SIGNAL DISPLAY:OFF

SELECT:▲ ▼
SET   :SET
END   :ACTION
```

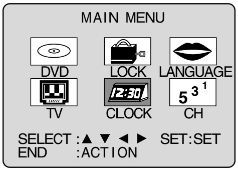
3) **Press ▲▼** to select "ANTENNA," then **press SET** to set your antenna system ("TV" or "CABLE").

4) **Press ▲▼** to select "AUTO SET," then **press SET**.

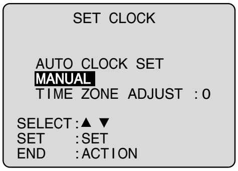
- After Channel Auto Set is finished, Clock Auto Set will be performed.
- If clock is set manually, clock Auto Set will not be performed.

■ Clock

1) **Press ▲▼◀ ▶** to select "CLOCK."


MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET:SET
END :ACTION

2) **Press SET**.

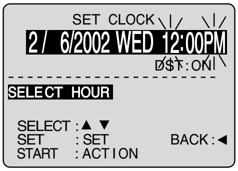


```
SET CLOCK

AUTO CLOCK SET
MANUAL
TIME ZONE ADJUST :0

SELECT:▲ ▼
SET   :SET
END   :ACTION
```

("TIME ZONE ADJUST" appears only when auto clock is set.)

3) **Press ▲▼** to select "MANUAL," then **press SET**.

(For Auto Clock Set, select "AUTO CLOCK SET," and **press SET**.)



```
SET CLOCK
2/ 6/2002 WED 12:00PM
DST:ON
--------------------
SELECT HOUR

SELECT : ▲ ▼
SET    : SET          BACK : ◀
START  : ACTION
```

<Example MANUAL CLOCK SET screen>

Continued on the next page.

Time Zone Adjust

4) **Press ▲▼** and **press SET** to select and set the month, date, year, time, and DST (Daylight Saving Time).

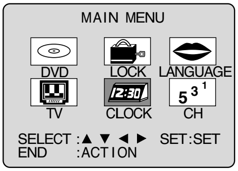
To Make Corrections, repeatedly press ◀ ▶ to move to error, then correct.

5) **Press ACTION** twice to start the clock and exit this mode.

Time Zone Adjust

(Only when Auto Clock is set.)

1) **Press ▲▼◀ ▶** to select "CLOCK."

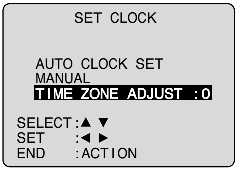


MAIN MENU

DVD
LOCK
LANGUAGE
TV
12:30
CLOCK
5 3 1
CH

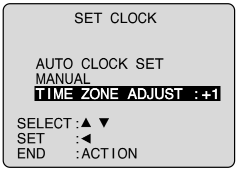
SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

2) **Press SET**.



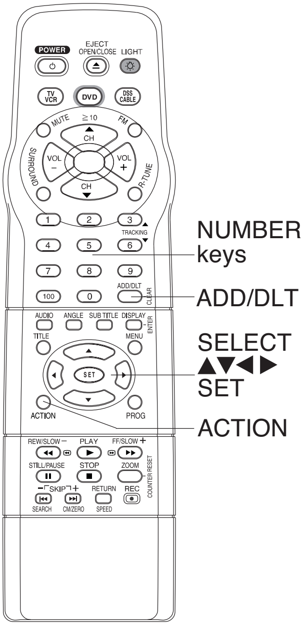
```
SET CLOCK

AUTO CLOCK SET
MANUAL
TIME ZONE ADJUST :0

SELECT:▲ ▼
SET   :◀ ▶
END   :ACTION
```

3) **Press ▲▼** to select "TIME ZONE ADJUST" and **press** ◀ or ▶ to subtract or add hour(s) as necessary.



```
SET CLOCK

AUTO CLOCK SET
MANUAL
TIME ZONE ADJUST :+1

SELECT:▲ ▼
SET   :◀
END   :ACTION
```

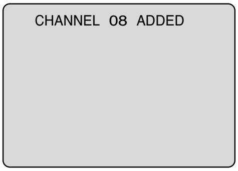
4) **Press ACTION** twice to exit.



POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM/ZERO
SPEED
COUNTER RESET
NUMBER keys
ADD/DLT
SELECT ▲▼◀ ▶
SET
ACTION

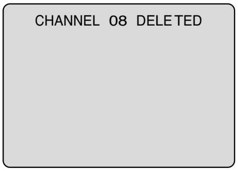
Add or Delete a Channel

To add channel:
Select channel with **number keys** and **press ADD/DLT**.



CHANNEL 08 ADDED

To delete channel:
Select channel with CH▲▼ or **number keys** and **press ADD/DLT**.

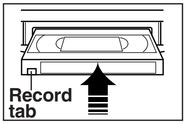


CHANNEL 08 DELETED

Playback a Tape

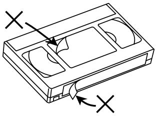
☑ Ready Checklist

☐ All connections are made.
☐ Your unit is plugged in.



1 **Insert a tape.**
- The unit power comes on automatically.

To prevent tape jam, remove loose or peeling labels from tapes.



2 **Press PLAY*** to play a tape.
- If tape has no record tab (see page 4), auto play begins.

■ **Forward/Reverse scene search**
➔ **Press FF/SLOW+** or **REW/SLOW-**.
➔ **Press** again **or PLAY** to release.

■ **Still (Freeze) picture**
➔ **Press STILL/PAUSE**.
➔ **Press PLAY** to release.

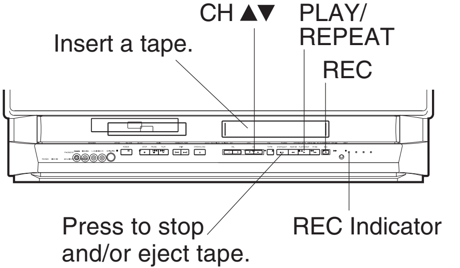
■ **Slow Motion picture**
➔ **Press FF/SLOW+** (increases speed) or **REW/SLOW-** (decreases speed) in Still mode.
➔ **Press PLAY** to release.

■ **Frame by Frame picture**
➔ **Press STILL/PAUSE** in Still mode.
➔ **Press PLAY** to release.

Notes
- These features work best in SP or SLP mode.
- After the unit is in Still or Slow mode for 3 minutes, it will switch to Stop mode automatically to protect the tape and the video head.

■ **Stop ➔ Press STOP**
■ **Rewind tape ➔ Press REW/SLOW-** in Stop mode
■ **Fast forward tape ➔ Press FF/SLOW+** in Stop mode
■ **Eject tape ➔ Press EJECT** on the remote or **STOP/EJECT** on the unit

Operation using unit buttons


CH ▲▼
PLAY/ REPEAT
Insert a tape.
REC
Press to stop and/or eject tape.
REC Indicator

Record On a Tape

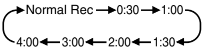
1 **Insert a tape with record tab.**
- The unit power comes on automatically.

2 **Press CH ▲▼** or **number keys** to Select Channel.
- For “LINE” input, see bottom of next page.

3 **Press SPEED** to select recording speed (see page 4).
SP = Standard Play
LP = Long Play
SLP = Super Long Play
- Selected speed is displayed.

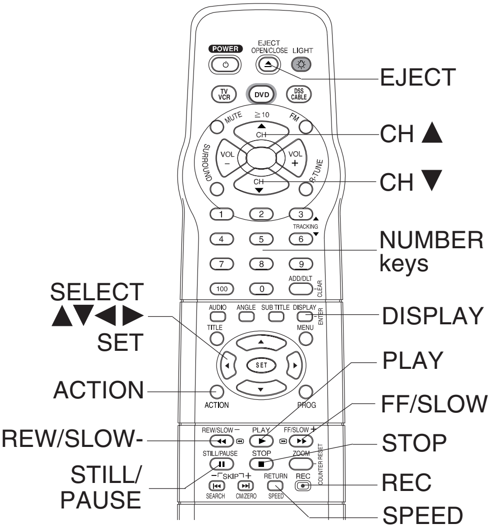
4 **Press REC** to start recording.
- To edit out unwanted portions, **press STILL/PAUSE** to pause and resume recording.
- You cannot view another channel during recording.

■ **Stop ➔ Press STOP**
■ **One Touch Recording (OTR)**
Press REC repeatedly to set the recording length (30 min - 4 hours.)


Normal Rec
0:30
1:00
1:30
2:00
3:00
4:00

- The unit stops recording at a preset time.
- PROG TIMER Indicator lights on the unit.

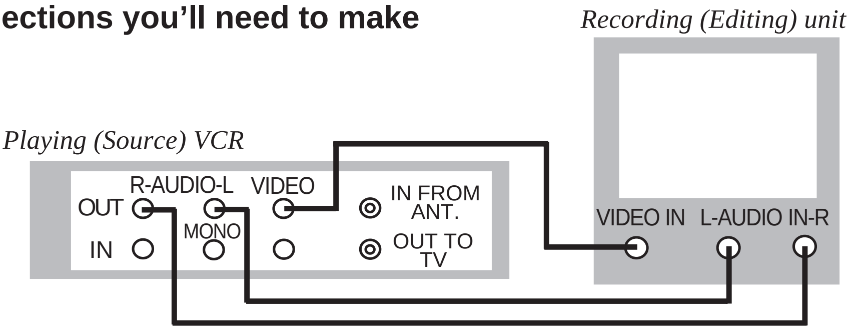
Notes
- **It is not possible to record from DVD/ Video CD/CD to VHS tape using this unit.**
- After the unit has been in Rec Pause mode for 5 minutes, it will stop automatically to protect the tape and the video head.
- The remaining recording time of an OTR can be displayed by pressing DISPLAY.

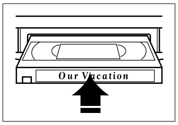
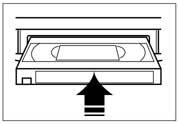
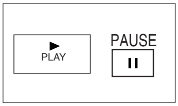
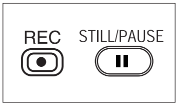

EJECT
CH ▲
CH ▼
NUMBER keys
SELECT ▲▼◀▶
SET
DISPLAY
PLAY
ACTION
FF/SLOW+
REW/SLOW-
STOP
STILL/ PAUSE
REC
SPEED
POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
FM
SURROUND
VOL
CH
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
TITLE
MENU
ENTER
PROG
ZOOM
SKIP
RETURN
SEARCH
CM/ZERO
COUNTER RESET

Copy Your Tapes (Dubbing)

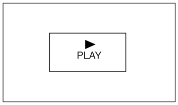
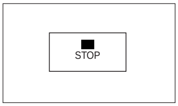
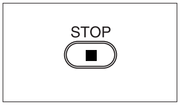
***Important:** If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Connections you'll need to make


Recording (Editing) unit
Playing (Source) VCR
OUT
IN
R-AUDIO-L
MONO
VIDEO
IN FROM ANT.
OUT TO TV
VIDEO IN
L-AUDIO IN-R

	Playback (Source)		Recording (Editing) unit	
1	 Our Vacation	**Insert pre-recorded tape.**		**Insert blank tape with record tab.** • Dubbing tapes protected with Copy Guard will have poor quality results.
2		————————		**Select "LINE" mode.** See "Selecting Input Mode" below.
3		**Press PLAY** then **PAUSE** at starting point to put in Standby mode.	 REC STILL/PAUSE	**Press REC**, then **Press STILL/PAUSE** immediately to put in Standby mode.

— **(Perform operation of steps 4 and 5 on both units at same time.)** —

4		**Press PLAY** to start dubbing.	STILL/PAUSE	**Press STILL/PAUSE** to start dubbing.
5		**Press STOP** to stop dubbing.		**Press STOP** to stop dubbing.

Caution

- Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.
- Please note that some tapes cannot be dubbed on this unit. Also, it is not possible to dub DVD/Video CD/CD to VHS tape using this unit.

Selecting Input Mode

Method 1:
Press CH ▲▼. The display will change as follows.

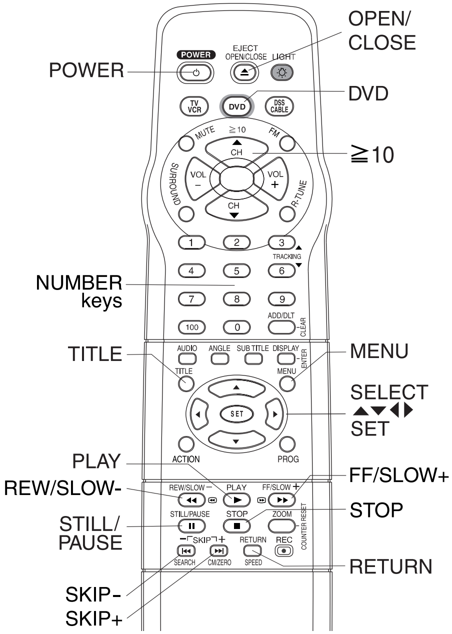
→LINE 2 ←→ 1 ←→ 2 ←→ 3 ←
(CABLE) (TV)
→LINE 1 ←→ 125 or 69 ←

Method 2:
a Press ACTION for MAIN MENU.
b Press ▲▼◀ ▶ to select "TV", then **press SET** for SET UP TV screen.
c Press ▲▼ to select "INPUT SELECT," and then **press SET** to select "TUNER," "LINE 1" or "LINE 2."
d Press ACTION twice to exit this mode.

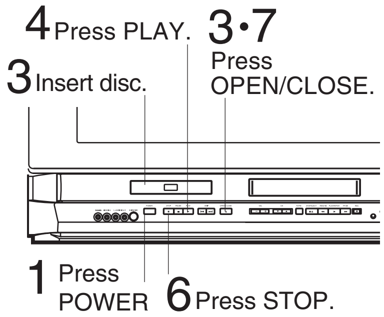
Basic DVD Operation

Ready Checklist

- ☐ All connections are made. (See page 11.)
- ☐ Your unit is plugged in.
- ☐ If unit is connected to an audio amplifier, turn the stereo system's power on.


POWER
OPEN/CLOSE
DVD
≧10
NUMBER keys
TITLE
MENU
SELECT ▲▼◀▶
SET
PLAY
REW/SLOW-
FF/SLOW+
STILL/PAUSE
STOP
RETURN
SKIP-
SKIP+

Operation using unit buttons


4 Press PLAY.
3•7 Press OPEN/CLOSE.
3 Insert disc.
1 Press POWER
6 Press STOP.

[*1] Interactive DVD...
May include multiple camera angles, stories, etc.

[*2] Video CD with playback control...
Particular scenes or information can be interactively selected from a menu that appears on the screen.

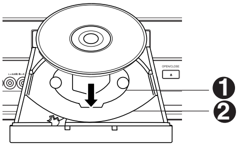
1 Press POWER* on the remote or unit.

2 Press DVD to select DVD mode.

- If a disc is already inserted, go to step 4. (Depending on the disc, playback may start automatically.)

3 Insert a disc.

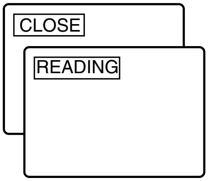
1) **Press OPEN/CLOSE**.
2) Place disc into disc tray.



- Hold disc by its edges only (page 7) with printed side up and use guides to place into tray. Use ❶ 3"(8 cm) or ❷ 5" (12 cm) disc.

4 Press PLAY to start play.

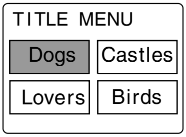
Disc tray closes automatically.


CLOSE
READING

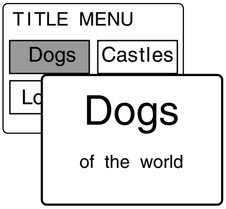
- You may also close the tray by **pressing OPEN/CLOSE**.
- Data reading time differs with each disc.

If an interactive DVD*1 or a Video CD with playback control*2 is used and a TITLE MENU appears, go to step 5.

<Example>


TITLE MENU
Dogs
Castles
Lovers
Birds

5


TITLE MENU
Dogs
Castles
Lo
Dogs
of the world

Press ▲▼◀▶ or **number key(s)** (see below) to select title and **press SET** to play.

Using number key(s) starts play automatically.

<Example>

<Example>	1 digit number	1 ••• 1
	2 digit number	12 ••• ≧10 1 2
	3 digit number	123 •••100 1 2 3

Press SKIP ▶▶I or I◀◀ to go to next or previous menu screen.

- SKIP function not available with all discs. Please refer to disc jacket for operation information.

To return to MENU (play stops)
Press TITLE, **MENU**, or **RETURN**. (DVD)
Press RETURN. (Video CD)

6 Press STOP to stop play.

7 Press OPEN/CLOSE to eject the disc.

⁎Important: If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

■ Forward/Reverse rapid scene search

➔ **Press FF/SLOW+** or **REW/SLOW-** during play.

➔ **Press PLAY** to release.

- Starting forward/reverse search during play started from menu on Video CDs may recall menu.
- Search speed, slow at first, increases with each additional press of the button up to 5 levels.

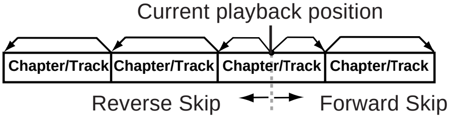
■ Forward/Reverse Chapter/Track Skip

➔ **Press SKIP ▶▶|** or **|◀◀** during play.

Each **press skips** a chapter (DVD) or track (Video CD/CD).

Pressing |◀◀ SKIP once midway through a chapter/track returns to start of that chapter/track. Each additional press skips back one chapter/track.

- **Pressing SKIP ▶▶|** or **|◀◀** during play started from menu on Video CDs may recall menu.



■ Still (Pause) Picture

➔ **Press STILL/PAUSE** during play.

➔ **Press PLAY** to release.

- **DVD/Video CD :** The unit will enter Still picture mode.
- **CD :** The unit will enter Pause mode.

■ Frame by Frame picture (DVD/Video CD)

➔ **Press STILL/PAUSE** in Still mode.

➔ **Press PLAY** to release.

- Each press advances picture one frame.
- Hold down for consecutive frame advance.
- Whether pictures are advanced by “FRAME” or “FIELD” is selected automatically (see page 61).

■ Slow Motion picture (DVD/Video CD)

➔ **Press FF/SLOW+** or **REW/SLOW-** (DVD only) in Still mode.

➔ **Press PLAY** to release.

- Slow motion speed, slow at first, is increased with each additional press of the button up to 5 levels.
- Reverse slow motion is not available for video CDs.

- When ⊘ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

RESUME function

The unit memorizes the point where STOP is pressed (▶ flashes on screen).
Press PLAY to resume play from this point.
Pressing STOP again or opening the tray cancels RESUME, however, RESUME is not canceled when power is turned off and on.

- RESUME works only with discs for which elapsed play time is displayed during play.

Auto-Power Off function

Power turns off after unit has been in Stop mode (DVD) for about 5 minutes.

Enjoy Video CDs featuring playback control without using menus (Video CDs only)

1. Do steps 1-4 (previous page).
   When menu appears, **press STOP**.
2. **Press number key(s)** to select desired track (play begins).
   - Check disc for track numbers.
   - Press “1” to start at beginning of disc.

To Resume Menu use,
Press STOP, and **press PLAY**, the menu screen will be displayed.
Now, go to step 5 (previous page).

Notes

- Please read the disc jacket for operation information.
- If a single sided disc is placed in upside down, “PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC” is displayed.
- Remove disc and press unit POWER off when not in use.
- Disc continues to rotate with menu displayed even after play is done. Press STOP to clear menu display when finished with menu.

TV Operation

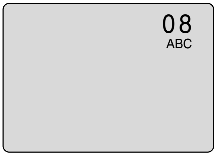
***Important:** If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

1 Press POWER* on the remote or unit.

☑ Ready Checklist

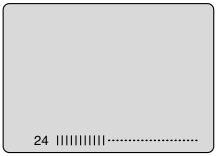
☐ All connections are made. (See page 11).
☐ Your unit is plugged in.

2

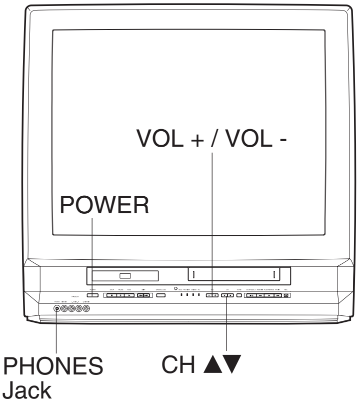


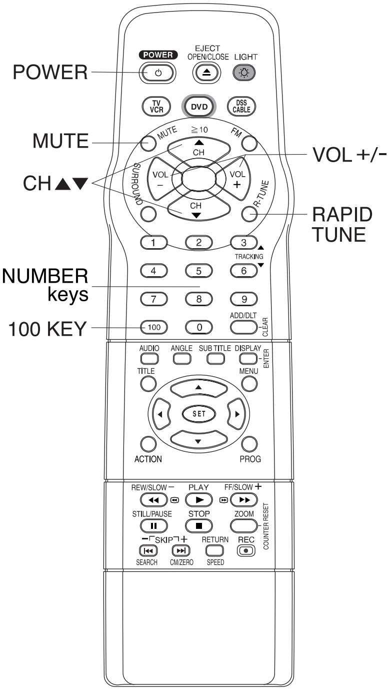
Use **CH ▲▼** or **number keys** to select a channel.

3



Press VOL + or **VOL -** to adjust volume.


VOL + / VOL -
POWER
PHONES Jack
CH ▲▼


POWER
MUTE
CH▲▼
NUMBER keys
100 KEY
VOL +/-
RAPID TUNE
POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
1
2
3
4
5
6
7
8
9
100
0
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
−SKIP+
RETURN
REC
SEARCH
CM/ZERO
SPEED
COUNTER RESET

Using the 100 key

When selecting CABLE channels 100 to 125 with the number keys, first press the 100 key, and then enter the remaining two digits.

Rapid Tune

Press R-TUNE to display the last channel you were watching.

Audio Mute

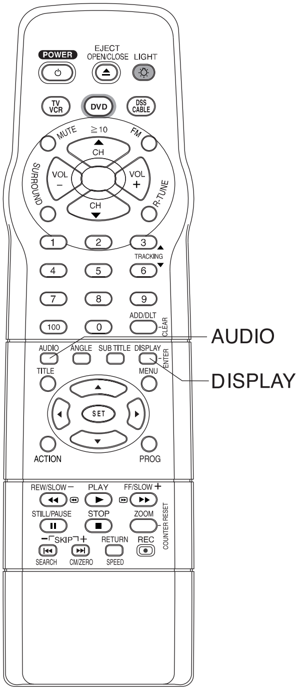
Press MUTE to instantly mute the sound.
Press again to restore the previous sound level.

Phones

Connect an earphone (not supplied) or headphones (not supplied) to the Phones Jack.

MTS Broadcast/TV Stereo System

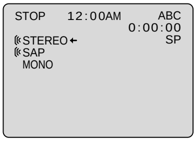
Equipped with dbx® -TV Noise Reduction for true MTS reproduction. dbx® -TV Noise Reduction is required for good stereo separation and audio fidelity. dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.


POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM/ZERO
SPEED
AUDIO
DISPLAY

Receivable Broadcast Types

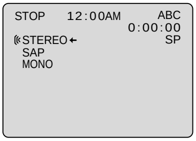
The following are possible audio broadcast types and on-screen displays. The signal being received is indicated with an “ ((” mark while the selected audio mode is indicated with an arrow. To change the audio mode for these broadcasts, see the “Select Audio Mode for TV Viewing” section (below.)

Press DISPLAY to display the broadcast signal being received.



```
STOP    12:00AM        ABC
                   0:00:00
((STEREO←               SP
((SAP
  MONO
```

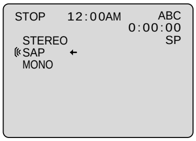
MTS Stereo and SAP broadcast
Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously.
Select the STEREO or SAP audio mode.



```
STOP    12:00AM        ABC
                   0:00:00
((STEREO←               SP
  SAP
  MONO
```

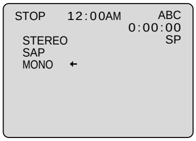
MTS Stereo broadcast
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.



```
STOP    12:00AM        ABC
                   0:00:00
  STEREO                SP
((SAP    ←
  MONO
```

SAP broadcast
Secondary Audio Program (sub language).
Select SAP audio mode for the sub language.



```
STOP    12:00AM        ABC
                   0:00:00
  STEREO                SP
  SAP
  MONO   ←
```

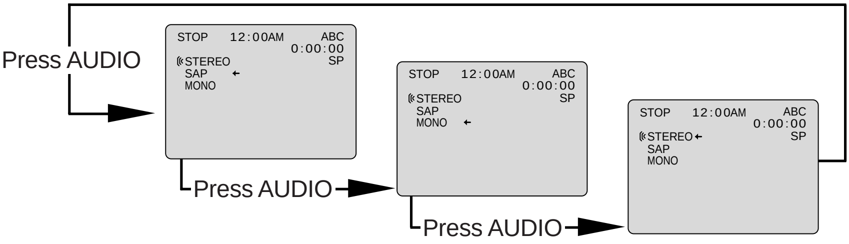
MONO broadcast
Normal monaural sound broadcast.

Audio Mode for TV Viewing

Press AUDIO to select the desired audio mode as described above.
(Arrow shows selection.)

- Each press of AUDIO will change the audio mode as shown below.
- “SAP” is selected with first press of AUDIO.

< Example >


Press AUDIO
Press AUDIO
Press AUDIO

```
STOP    12:00AM        ABC
                   0:00:00
((STEREO                SP
  SAP    ←
  MONO
```

```
STOP    12:00AM        ABC
                   0:00:00
((STEREO                SP
  SAP
  MONO   ←
```

```
STOP    12:00AM        ABC
                   0:00:00
((STEREO←               SP
  SAP
  MONO
```

Closed Caption System

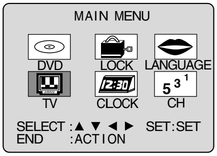
Closed Caption is ...

This multi-use system not only allows the hearing impaired to enjoy selected programs, but also makes useful information from TV stations available to everyone.

Closed Caption Mode Feature

1 **Press ACTION*** to display MAIN MENU.

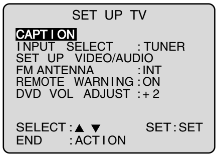
2



```
MAIN MENU
DVD   LOCK   LANGUAGE
TV    CLOCK  CH
SELECT:▲ ▼ ◀ ▶   SET:SET
END   :ACTION
```

1) **Press ▲▼◀ ▶** to select "TV."
2) **Press SET** to display SET UP TV screen.

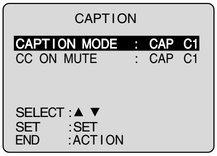
3



```
SET UP TV
CAPTION
INPUT SELECT      :TUNER
SET UP VIDEO/AUDIO
FM ANTENNA        :INT
REMOTE WARNING    :ON
DVD VOL ADJUST    :+2

SELECT:▲ ▼         SET:SET
END   :ACTION
```

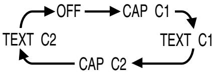
1) **Press ▲▼** to select "CAPTION".
2) **Press SET** to display CAPTION screen.

4



```
CAPTION
CAPTION MODE   :  CAP C1
CC ON MUTE     :  CAP C1

SELECT:▲ ▼
SET   :SET
END   :ACTION
```

1) **Press ▲▼** to select CAPTION MODE.
2) **Press SET** repeatedly to select mode. (See left.)



---

5 **Press ACTION** three times to return to the normal screen.

Recording and Playing Back a Closed Caption/ Text Program

Record : Record normally. Closed Caption/Text signal, if present, is recorded automatically.

Playback : Start playback. Do above steps to select desired caption mode.

Closed Caption Mode Selections

Caption Mode: CAP C1 or C2
A narration of selected TV programs is displayed.
Check TV program listings for CC (Closed Caption) broadcasts.

Caption Mode: TEXT C1 or C2
The lower half of the screen will be blocked out. When the TV station broadcasts information, such as program listings, it will appear in this space.

Caption Mode: OFF
Closed Caption /Text narration will not be displayed.

NOTE :
The closed caption or text signal may be broadcast over C1, C2, or both.
Also, text contents can vary so you may wish to try different settings.

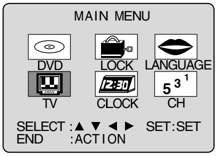
*Important: If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Caption On Mute Feature

Closed Caption narration, if available, is displayed when MUTE button is pressed for silence.

1 **Press ACTION** to display MAIN MENU.

2

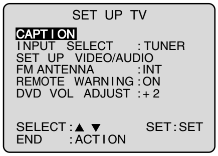


```
          MAIN MENU
  DVD        LOCK      LANGUAGE
  TV         CLOCK     CH
SELECT :▲ ▼ ◀ ▶   SET:SET
END    :ACTION
```

1) **Press ▲▼◀▶** to select "TV."

2) **Press SET** to display SET UP TV screen.

3

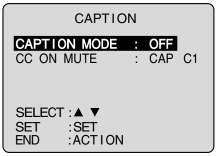


```
          SET UP TV
CAPTION
INPUT SELECT      :TUNER
SET UP VIDEO/AUDIO
FM ANTENNA        :INT
REMOTE WARNING :ON
DVD VOL ADJUST :+2

SELECT :▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼** to select "CAPTION".

2) **Press SET** to display CAPTION screen.

4

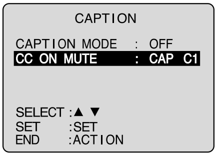


```
          CAPTION
CAPTION MODE   :  OFF
CC ON MUTE     :  CAP C1


SELECT :▲ ▼
SET    :SET
END    :ACTION
```

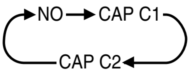
1) **Press ▲▼** to select CAPTION MODE.

2) **Press SET** repeatedly to select "OFF."

5



```
          CAPTION
CAPTION MODE   :  OFF
CC ON MUTE     :  CAP C1


SELECT :▲ ▼
SET    :SET
END    :ACTION
```


NO
CAP C1
CAP C2

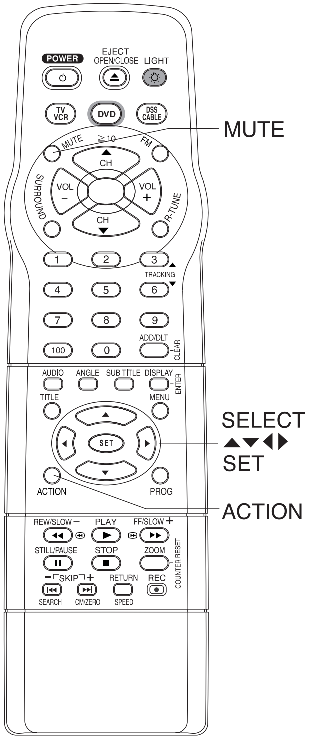
1) **Press ▲▼** to select CC ON MUTE.

2) **Press SET** repeatedly to select desired mode.

- Each press of **SET** will change the display as shown left.
- The caption may be broadcast over CAP C1 or C2.

6 **Press ACTION** three times to return to the normal screen.

7 **Press MUTE** to mute the sound and display closed captioning.
- To cancel, press MUTE again.


POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≥10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
−SKIP+
RETURN
REC
SEARCH
CM/ZERO
SPEED
MUTE
SELECT ▲▼◀▶
SET
ACTION

Note

- When a disc supporting closed caption is used, the subtitle and the closed caption may overlap. In this case, turn the subtitle or caption on mute mode off. (See page 48.)

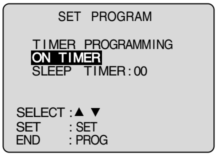
TV Timer Features

ON-TIMER with Alarm

This unit can be set to automatically power on in one of 4 modes (TV, VCR Playback, FM radio, or DVD/Video CD/CD.) You can also combine the On-Timer with a one minute alarm that gradually increases in volume.

1 **Press PROG*** to display SET PROGRAM screen.

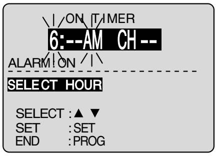
2



```
SET  PROGRAM

TIMER PROGRAMMING
ON TIMER
SLEEP  TIMER:00

SELECT :▲ ▼
SET      : SET
END      : PROG
```

1) **Press ▲▼** to select "ON TIMER."
2) **Press SET** to display ON TIMER screen.

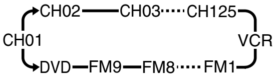
3



```
ON TIMER
6:--AM  CH--
ALARM:ON
-------------------------
SELECT HOUR

SELECT :▲ ▼
SET      :SET
END      :PROG
```

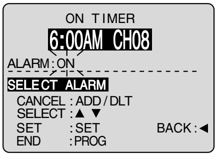
1) **Press ▲▼** to select desired settings.
2) **Press SET** to set the ON-TIMER TIME or ON-TIMER mode.

- ON-TIMER mode selection order



- Make sure a tape is inserted if Playback mode is selected.
- Make sure a disc is inserted if DVD (DVD/Video CD/CD) mode is selected.
- See "FM Radio" on pages 28 and 29 for instructions on how to preset FM stations.

4



```
ON TIMER
6:00AM  CH08
ALARM:ON
-------------------------
SELECT ALARM
CANCEL :ADD/DLT
SELECT :▲ ▼
SET      :SET           BACK:◀
END      :PROG
```

Press ▲▼ to select ALARM "ON" or "OFF."

When "ON" is selected,
an alarm will gradually increase in volume for one minute or until canceled by pressing any button (including VOL + -).

To Make Corrections,
use ▲▼ and ◀▶ to move back and correct.

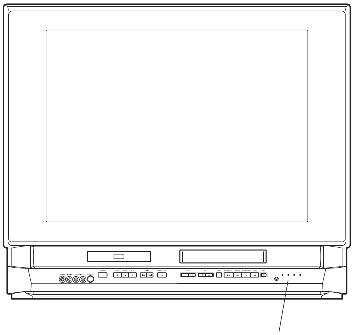
5 **Press PROG** to set ON TIMER.
- "ON TIMER SET" is displayed.
- ON-TIMER Indicator lights up on the unit.

To Cancel ON-TIMER set,

Repeat steps **1** and **2**. Then, **press ADD/DLT** to clear the time in step **3**. Now, **press PROG** to end. "ON TIMER END" briefly appears on-screen.

Ready Checklist

☐ The clock is set to correct time.

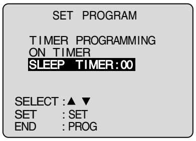


Sleep Timer

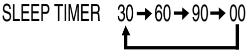
This unit can be set for auto power off.

1 **Press PROG** to display SET PROGRAM screen.

2



```
SET  PROGRAM

TIMER PROGRAMMING
ON TIMER
SLEEP  TIMER:00

SELECT :▲ ▼
SET      : SET
END      : PROG
```



1) **Press ▲▼** to select SLEEP TIMER.
2) **Press SET** repeatedly to select the desired time.

To cancel,
press SET repeatedly until 00 appears.

3 **Press PROG** to return to the normal screen.
- **Pressing DISPLAY** with sleep timer set displays remaining time.

Note

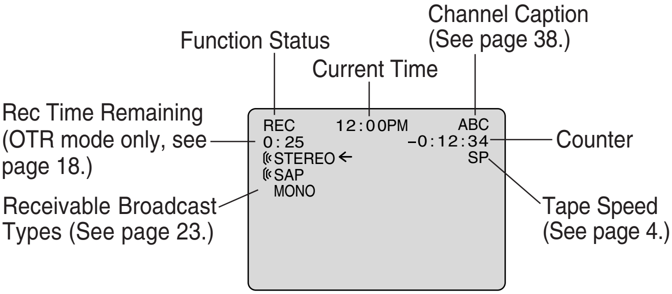
If no button on the remote or unit (including a button used to turn off the alarm) is pressed within 60 minutes after unit turns itself on, it will turn itself back off.

On-Screen Display (OSD)

***Important:** If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

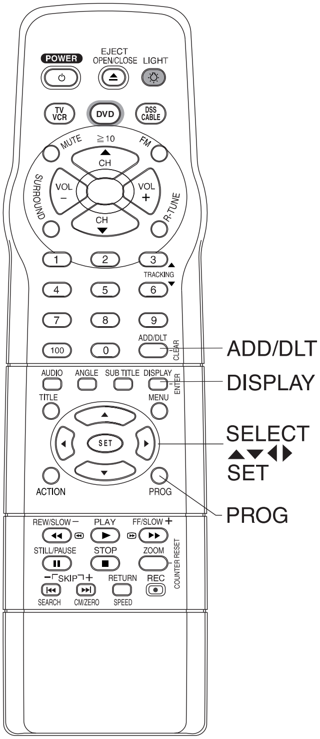
TV/VCR Status & Clock Display

Press DISPLAY
to display or remove the overlay.


Function Status
Channel Caption (See page 38.)
Current Time
Rec Time Remaining (OTR mode only, see page 18.)
Receivable Broadcast Types (See page 23.)
Counter
Tape Speed (See page 4.)
REC
12:00PM
ABC
0:25
-0:12:34
STEREO
SAP
MONO
SP

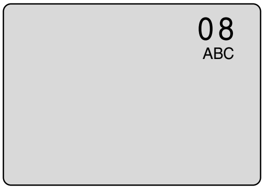
Blue Screen Display

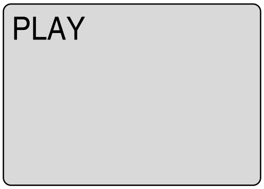
Whenever a blank section of a tape comes up in Play mode, or when the selected channel has no broadcast signal with the Weak Signal Display Feature set to "OFF" (see page 39), the screen will turn solid blue.


ADD/DLT
DISPLAY
SELECT
▲▼◀▶
SET
PROG
POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
TRACKING
CLEAR
AUDIO
ANGLE
SUB TITLE
ENTER
TITLE
MENU
SET
ACTION
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM/ZERO
SPEED

Channel & Function Display

When a function button is pressed (PLAY, FF, etc.) or you change channels, the unit mode or channel number will be displayed. (Some station names may also appear if Channel Caption is set. See page 38.)





FM Radio

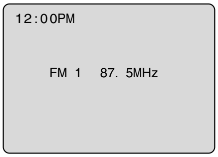
FM Radio is ...

This unit has an FM radio with built-in antenna, 9 station preset, and a band range of 87.5 ~ 108.1 MHz. You can even set the On-Timer (page 26) to wake up to your favorite radio station.

FM Radio Setup

1 **Press FM** on the remote or **press TV/FM** on the unit to display FM radio mode.

2

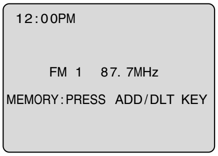


12:00PM

FM 1 87. 5MHz

Press a number key* (1~9) to select the FM preset number.

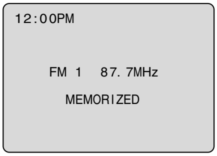
3



12:00PM

FM 1 87. 7MHz

MEMORY:PRESS ADD/DLT KEY



12:00PM

FM 1 87. 7MHz

MEMORIZED

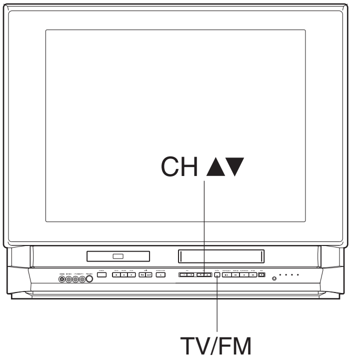
1) **Press CH ▲▼** to select the desired radio station. (Each press changes frequency 200 KHz.)
2) **Press ADD/DLT** to set the radio station.

Hold down CH ▲ or **▼** for a few seconds, then release to quickly scan for FM stations in your area.

- To cancel, **press CH ▲** or **▼** while in search mode.

To Make Corrections, select station with a number key, then do step **3** again.

To exit FM mode, press TV/VCR or **DVD** on the remote or **TV/FM** on the unit.

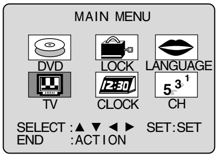


FM Antenna Setup

Make sure FM tuning is done correctly (see FM Radio Setup).

1 **Press ACTION** to display MAIN MENU.

2

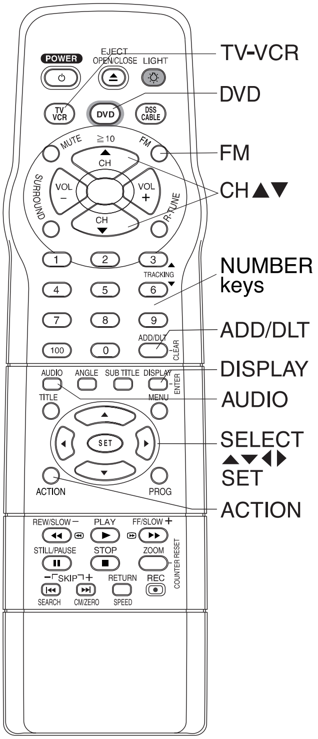


SELECT :▲ ▼ ◄ ► SET:SET
END :ACTION

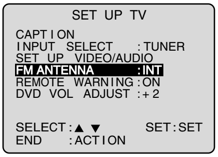
1) **Press ▲▼◄ ►** to select "TV."
2) **Press SET** to display SET UP TV screen.

Continued on next page.

*Important: If a remote control button does not work when pressed, press the FM button on the remote and try the button again.



3



```
SET UP TV
CAPTION
INPUT SELECT    :TUNER
SET UP VIDEO/AUDIO
FM ANTENNA        :INT
REMOTE WARNING :ON
DVD VOL ADJUST :+2

SELECT:▲ ▼        SET:SET
END     :ACTION
```

1) **Press ▲▼** to select FM ANTENNA.
2) **Press SET** to select “INT (INTERNAL)” or “EXT (EXTERNAL)” whichever sounds the best.

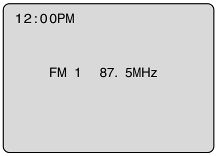
■ **For cable TV users → “INT”**
■ **For antenna users → “EXT”**

4 **Press ACTION** twice to end setup.

Using FM Radio

1 **Press FM** on the remote or **press TV/FM** on the unit to display FM radio mode.

2

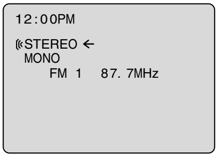


```
12:00PM

      FM 1   87. 5MHz
```

Press a number key (1~9) to select a preset FM number (see FM Radio Setup on page 28).

To exit FM mode, press TV VCR or **DVD** on the remote or **TV/FM** on the unit.

Audio Mode for FM Radio



```
12:00PM
((STEREO ←
  MONO
     FM 1   87. 7MHz
```

Press AUDIO repeatedly to select “STEREO” or “MONO” in FM Radio mode.

Notes

- FM radio cannot be recorded on a Video cassette.
- You may get better reception by repositioning the unit.
- You cannot select FM Radio mode during playback or record, or while a blue back screen (PROG, ACTION, MENU) is displayed.
- Once stations are set, the selected station and current time are displayed when FM Radio mode is entered.
  To remove time, press DISPLAY. If DISPLAY is pressed again, the unit status screen appears.

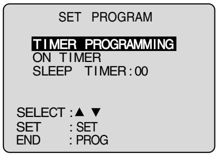
Timer Recording

You can set up to 8 programs to be recorded while you are away.

1

Press PROG* to display SET PROGRAM screen.

2



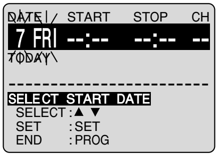
```
      SET  PROGRAM

  TIMER  PROGRAMMING
  ON  TIMER
  SLEEP  TIMER:00


SELECT :▲ ▼
SET      : SET
END      : PROG
```

1) **Press ▲▼** to select TIMER PROGRAMMING.

2) **Press SET** to display screen.

- If a program is already in memory, **press ▲▼**, and **SET** to select an unused program number.

3

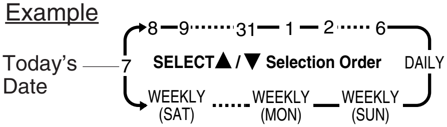


```
DATE|/   START    STOP    CH
 7 FRI  --:--   --:--   --
TODAY\

------------------------
SELECT  START  DATE
 SELECT :▲ ▼
 SET     :SET
 END     :PROG
```

Press ▲▼ to select and **SET** or **◀ ▶** to set the recording DATE.

- 1~31 = One time
- DAILY = MON~FRI
- WEEKLY SUN~SAT = Same time once a week

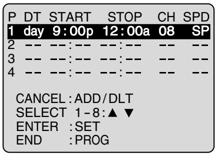
Example



Repeat step 3 to set:

- start time, stop time
- Channel (or LINE for outside source)
- Speed (SP, LP, SLP)

4



```
P  DT  START   STOP   CH  SPD
1  day  9:00p  12:00a  08   SP
2  --  --:--  --:--   --   --
3  --  --:--  --:--   --   --
4  --  --:--  --:--   --   --

 CANCEL:ADD/DLT
 SELECT  1-8:▲ ▼
 ENTER  :SET
 END      :PROG
```

Press PROG to end the program.

To Enter More Programs, press ▲▼ to select and **SET** to set a blank program number, and then repeat step 3.

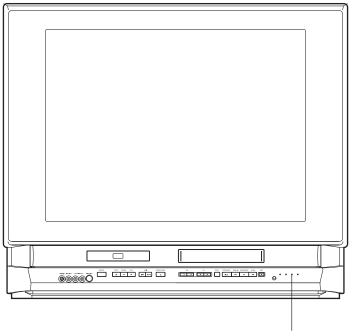
5

Press PROG twice to exit this mode.

- If you're using a cable box, make sure that it is tuned to the desired channel and the power is left on for timer recording.
- PROG TIMER Indicator lights up on the unit.

☑ Ready Checklist

☐ All connections are made.
☐ Your unit is plugged in.
☐ The clock is set to correct time.
☐ The tape is long enough.
☐ The record tab is in place.



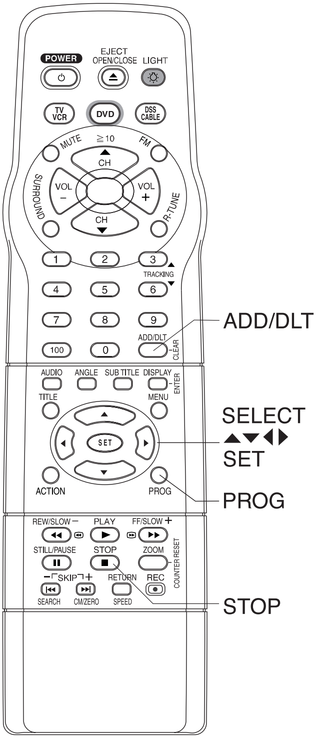
PROG TIMER Indicator

*Important: If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

Cancel a Timer Recording: (Recording is in progress)

Hold down STOP for a few seconds to cancel the Timer Recording.

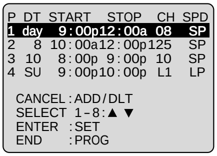
- Any future daily or weekly recordings will be performed as programmed.



Review, Replace or Clear Program Contents : (Recording is not in progress)

1 **Repeat steps 1 and 2 on page 30.**

2

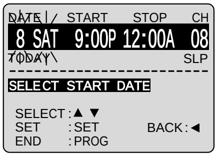


```
P  DT  START    STOP   CH  SPD
1  day   9:00p12:00a  08   SP
2   8  10:00a12:00p125    SP
3  10   8:00p  9:00p  10   SP
4  SU   9:00p10:00p  L1   LP

 CANCEL :ADD/DLT
 SELECT 1-8:▲ ▼
 ENTER  :SET
 END    :PROG
```

Press ▲▼ to select the desired program.

3

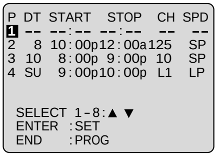
To Replace program...



```
DATE       START     STOP    CH
 8 SAT   9:00P  12:00A   08
TODAY                       SLP
------------------------------
SELECT START DATE

 SELECT:▲ ▼
 SET    :SET          BACK:◄
 END    :PROG
```

1) **Press SET** to display.
2) **Press ▲▼** to select and **press SET** or ◀ ▶ to set new program contents.
3) **Press PROG**.

To Clear program...



```
P  DT  START    STOP   CH  SPD
1  --  --:--  --:--   --   --
2   8  10:00p12:00a125    SP
3  10   8:00p  9:00p  10   SP
4  SU   9:00p10:00p  L1   LP

 SELECT 1-8:▲ ▼
 ENTER  :SET
 END    :PROG
```

Press ADD/DLT.

4 **Press PROG** twice to exit this mode.

Notes

- 2 minutes before Timer recording is performed, “PLEASE PREPARE FOR TIMER REC” appears and/or the PROG TIMER Indicator flashes.
  Be sure a cassette with record tab is loaded and the unit is in Stop mode.
- If the start times of two programs overlap, the lower numbered program will have priority.
- If the start time for a Timer Recording comes up during a normal recording or One Touch Recording (page 18), the Timer Recording will not be performed.
- If there is a power interruption of more than one minute, the recording may not be performed or continued.
- If “INCOMPLETE” appears after all items have been set, check all entries and make necessary corrections.

Cable Box Universal Remote Control Feature

Universal Remote Control is...

The Remote Control may be set up to control some basic DSS or Cable box functions.

The Universal Remote Control Setup

1 **Find your DSS box or Cable box Brand Code Number from one of the charts on the next page.**

---

2 **Setup remote.**

Hold down DSS CABLE and **press number keys** to enter code.

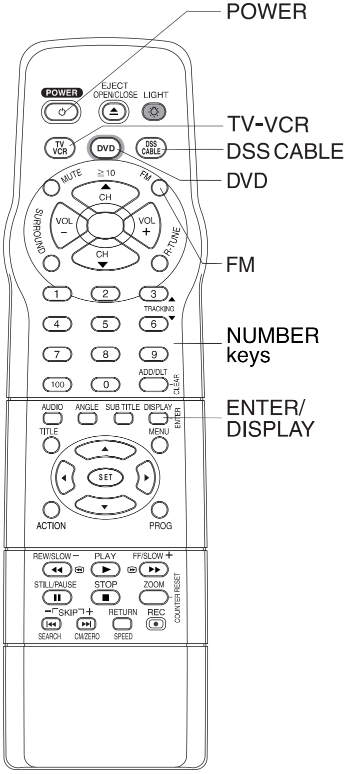
- If code number is 100 or greater, e.g., press 1 - 0 - 2 for 102.

---

3 **Confirm code entry.**

Press POWER* to turn selected unit ON or OFF.

- See below for controllable functions in each mode.



Notes

- Please repeat the Universal Remote Control Setup after replacing remote control batteries.
- The remote control will not operate all DSS receivers or Cable Boxes made by the manufactures listed. If you get no results, your particular brand cannot be controlled.

Using the Universal Remote Control (Available Buttons / Functions)

Once the remote control has been properly set up, you can select TV-VCR, FM, DVD, DSS or CABLE mode depending on which functions you wish to control.

Press TV VCR, FM, DVD or DSS CABLE on the remote control to select the desired mode. (See below for buttons available in each mode.)

Set to TV VCR, FM, DVD:

All TV functions, as well as functions of TV-VCR, FM, or DVD.

Set to DSS CABLE:

- Basic VCR functions, e.g. PLAY, REC, etc.
- CABLE/DSS function, e.g. POWER, ENTER, NUMBER keys (except 100 key), CH UP/DOWN.

*Important: If a remote control button does not work when pressed, press the TV/VCR, DVD, FM button on the remote and try the button again.

DSS Brand Code Numbers

Toshiba	90
Hitachi/ Hughes	91, 99
Primestar	92
Drake	93
Magnavox	94, 95
Uniden	94, 95
Optimus	94, 95
Panasonic	96
ProScan	97
RCA	97
SONY	98, 105

Cable Box Brand Code Numbers

Archer	44, 06, 01, 120, 05, 63, 126
Cableview	29, 09, 01, 63, 120, 44, 42, 30, 52, 04, 124, 126
Citizen	44, 52, 30, 63, 42, 04, 124, 126
Curtis	08, 09, 25, 61, 53, 87
Century	44, 51, 75, 59, 126
Cabletenna	29, 09, 01, 63, 120, 44, 126
Cable Cinema	29, 09, 01, 63, 120, 44, 126
Diamond	29, 09, 01, 63, 120, 44, 126
Eagle	62, 40, 22, 13, 58, 20, 26, 107
Eastern	28, 29, 130
Explorer	08, 09, 25, 61, 53, 87
Gemini	30, 04, 124
General Electric	01, 57, 120
General Instruments	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Gerrard	44, 51, 75, 59
GC Electronics	44, 42, 63, 29, 30, 52, 04, 124, 126
Hamlin	41, 14, 15, 28, 102, 104, 103, 130
Hitachi	31
Jerrold	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122, 115, 117, 118, 124
Jasco	30, 04, 124
Macom	31
Magnavox	26, 112
Matsushita	17, 16, 08, 87, 109
Movietime	32, 39, 42, 44, 126, 38, 40
Maestro	74, 35
NEC	40, 19, 38, 32
NSC	40, 19, 38, 32
Novavision	08, 09, 25, 61, 53, 87
Next Level	01, 84, 83, 34, 03, 02, 04, 55, 65, 66, 67, 68, 120, 106, 121, 122
Oak	46, 11, 129, 101
Oak Sigma	46, 11, 129, 101
Panasonic	17, 16, 08, 87, 109
Philips	23, 24, 20, 13, 07, 50, 128, 129
Pioneer	06, 05, 12
Pulsar	04, 42, 63, 44, 30, 52, 124, 126
Quest	06, 05, 12
Radio Shack	44, 51, 75, 59, 126
RCA	17, 16, 08, 87, 109
Realistic	44, 51, 75, 59, 126
Recoton	44, 51, 75, 59, 126
Regal	41, 14, 15, 28, 102, 104, 103, 130
Regency	28, 29, 130
Rembrandt	44, 42, 63, 29, 01, 32, 39, 120, 126
Samsung	42, 06, 32, 05, 40
Scientific Atlanta	08, 09, 25, 61, 53, 87
Sheritech	27
Signal	26, 112
SL Marx	42, 06, 32, 40, 43, 44, 52, 63, 126
Sprucer	17, 16, 08, 87, 109
Standard Components	32, 39, 42, 44, 126
Stargate	04, 42, 32, 40, 63, 44, 30, 52, 06, 124, 126
Sylvania	19, 18
Teknika	74, 35
Telecaption	77, 127
Teleview	40, 19, 38, 32, 42, 06
Texscan	19, 18
Tocom	34, 33, 01, 42, 66, 120
Toshiba	36
Unika	44, 42, 63, 29, 01, 126, 120
Universal	52, 43, 44, 63, 42, 126
Viewstar	62, 40, 22, 13, 58, 20, 26, 107
Videoway	07, 23, 50, 129
Vidtek	64
Zenith	07, 23, 50, 129

Notes

- In DSS or CABLE mode, it may be necessary to press ENTER after pressing number keys for channel selection.
- In DSS or CABLE mode, POWER, CH Up/Down, Number Keys, ACTION, PROG, DISPLAY/ENTER, SEARCH/SKIP-, R-TUNE, SELECT, SET, CM SKIP/ZERO/SKIP+, COUNTER RESET/ZOOM, ANGLE, AUDIO, TITLE, SUB TITLE, MENU, or ADD/DLT are not available. Press TV/VCR, FM, DVD to use these functions.
- Depending on your DSS receiver or Cable box brand, some of the functions listed may not be remote controllable.
- Some DSS receiver or Cable box brands require you to turn on the power manually.
- Due to changes in infra-red commands used by manufacturers, some brands have several codes. If your unit does not respond to the first code, please try the next one.

Tape Operation

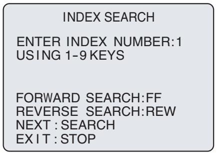
Search System is ...

Each time a recording is made, an invisible index mark is placed on the tape.
When timer recordings are made, program index and information are also included.
These index marks can be used to access or scan recordings.

Index Search

Go directly to the desired recording.

1



INDEX SEARCH

ENTER INDEX NUMBER:1
USING 1-9 KEYS

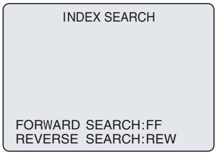
FORWARD SEARCH:FF
REVERSE SEARCH:REW
NEXT : SEARCH
EXIT : STOP

Press SEARCH* in Playback or Stop mode to display INDEX SEARCH screen, and then **press NUMBER Keys** to select the recording number.

- To calculate number, see below.

Press FF or **REW** to start search.

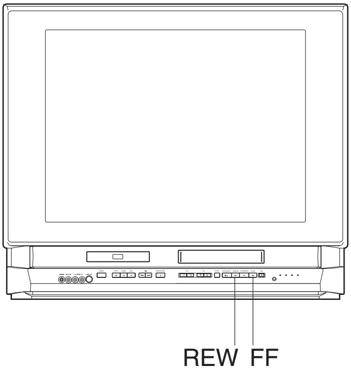
2



INDEX SEARCH

FORWARD SEARCH:FF
REVERSE SEARCH:REW

Play begins at search end. To search forward or back 1 index, **press FF** or **REW** while screen left in displayed (10 sec.).

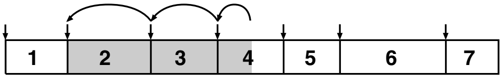


To cancel, press PLAY or **STOP.**

■ To calculate the Index Number

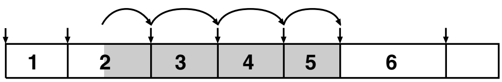
Example 1:

To go to rec. 2 from rec. 4, enter 3 and press REW.



Example 2:

To go to rec. 6 from rec. 2, enter 4 and press FF.

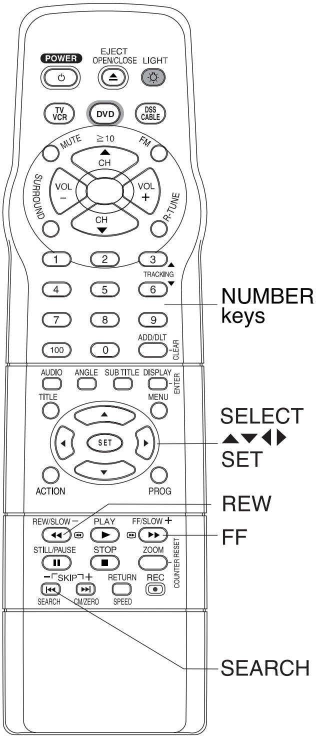


NOTE: ↓ indicates start points of each recording.

Notes

- Make each entry within 5 minutes, or the Index Search mode will be canceled.
- If Index Search is started very close to an index mark, that index mark may not be counted in the search.

*Important: If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

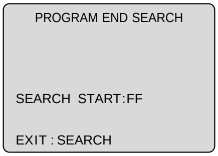

POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM/ZERO
SPEED
COUNTER RESET
NUMBER keys
SELECT ▲▼◀▶
SET
REW
FF
SEARCH

Program End Search

Locates end point of recording for continuity.

1 **Press SEARCH** twice in Playback or Stop mode to display PROGRAM END SEARCH screen .

2



PROGRAM END SEARCH

SEARCH START:FF

EXIT : SEARCH

Press FF
to start search.

To cancel,
press PLAY or **STOP.**

Example of **Program End Search** operation.

Fig.1

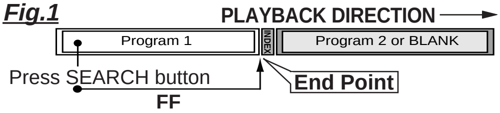

PLAYBACK DIRECTION
Program 1
INDEX
Program 2 or BLANK
Press SEARCH button
FF
End Point

Fig.2

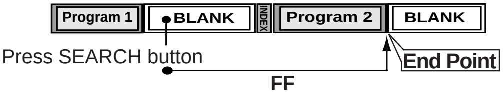
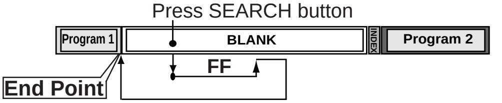
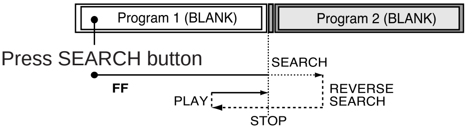

Program 1
BLANK
INDEX
Program 2
BLANK
Press SEARCH button
FF
End Point

Fig.3 If search exceeds a few seconds in BLANK area.


Press SEARCH button
Program 1
BLANK
INDEX
Program 2
FF
End Point

Upon locating end point...
The unit searches slightly past end point, reverse searches, and plays the last few seconds of the program, then stops.


Program 1 (BLANK)
Program 2 (BLANK)
Press SEARCH button
SEARCH
FF
REVERSE SEARCH
PLAY
STOP

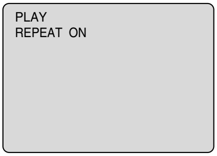
Note

- If Program End Search is started very close to an index mark, that mark may be skipped over.

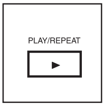
Tape Operation (continued)

Repeat Play

Set to see a recording over and over.



PLAY
REPEAT ON



To turn “ON,”
press PLAY/REPEAT on the unit repeatedly in Play mode to select “REPEAT ON”.

To turn “OFF,”
repeat above to select “REPEAT OFF.”

- Playback repeats when tape end is reached or unrecorded portion over 30 seconds is detected.

Note

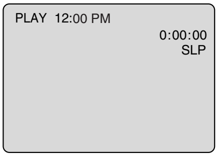
- For repeat play in DVD mode, see page 55.

Zero Search

To quickly return to a specific tape counter location.

1 **Press DISPLAY*** during playback to display the Counter.

2



PLAY 12:00 PM
0:00:00
SLP

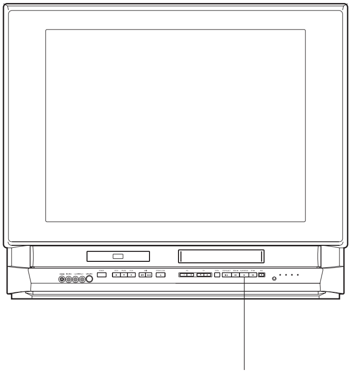
Press COUNTER RESET at the desired position to reset to “0:00:00.”

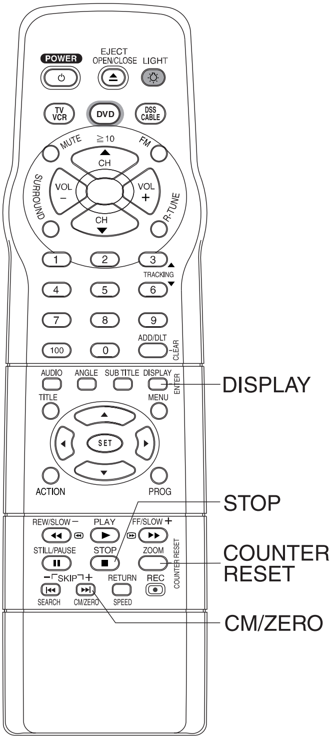
3 **Continue playback, rewind, or fast forward.**

4 **Press STOP.**

5 **Press CM/ZERO** in stop mode to start ZERO SEARCH.

- Unit goes into FF or REW mode and stops at the last point the Counter was set to 0:00:00.




POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL −
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW −
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
− SKIP +
RETURN
REC
SEARCH
CM/ZERO
SPEED
DISPLAY
STOP
COUNTER RESET
CM/ZERO

Auto Operation Functions

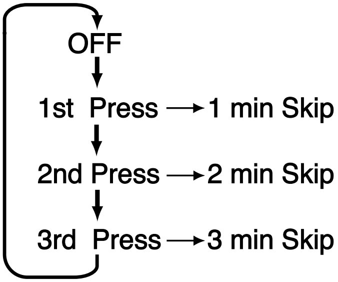
- **Auto Shut Off**
  No broadcast signal in TV mode (Only when Weak Signal Display is set to **OFF**.), DVD stop, or blank tape is played for 5 minutes
  ➔ Power turns off
  - This feature is canceled if any button is pressed during above conditions.
- **Auto Playback**
  Insert a tape in Power off mode
  ➔ Power turns on
  - Playback begins if tape has no record tab.
- **Auto Rewind (except for Recording)**
  Tape reaches its end
  ➔ Rewind, ➔ Stop
- **Playback Auto Eject (Repeat Play is "OFF")**
  Tape with no record tab reaches its end
  ➔ Rewind, ➔ Stop, ➔ Eject

Commercial Skip

By pressing the CM/ZERO button in Playback mode you can skip over 1 to 3 minutes of recorded tape in just a few seconds.

Press CM/ZERO repeatedly to select skip time in Playback mode.

- No indication appears.

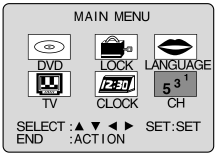

OFF
1st Press → 1 min Skip
2nd Press → 2 min Skip
3rd Press → 3 min Skip

Special VCR Features

Channel Caption

1 **Press ACTION*** to display MAIN MENU.

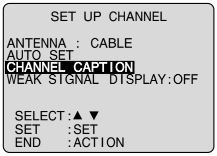
2



```
MAIN MENU
DVD   LOCK   LANGUAGE
TV    CLOCK  CH
SELECT :▲ ▼ ◀ ▶   SET:SET
END    :ACTION
```

1) **Press ▲▼◀▶** to select “CH.”
2) **Press SET** to display SET UP CHANNEL screen.

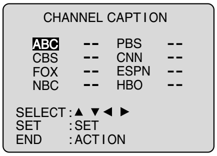
3



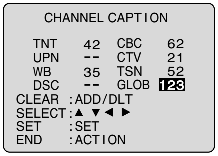
```
SET UP CHANNEL

ANTENNA  :  CABLE
AUTO SET
CHANNEL CAPTION
WEAK SIGNAL DISPLAY:OFF

SELECT:▲ ▼
SET    :SET
END    :ACTION
```

1) **Press ▲▼** to select CHANNEL CAPTION.
2) **Press SET** to display screen.

4



```
CHANNEL CAPTION

ABC   --   PBS    --
CBS   --   CNN    --
FOX   --   ESPN   --
NBC   --   HBO    --

SELECT:▲ ▼◀ ▶
SET    :SET
END    :ACTION
```



```
CHANNEL CAPTION

TNT   42   CBC    62
UPN   --   CTV    21
WB    35   TSN    52
DSC   --   GLOB  123
CLEAR  :ADD/DLT
SELECT:▲ ▼◀ ▶
SET    :SET
END    :ACTION
```

1) **Press ▲▼** to select a station.
2) **Press SET** (or ▶) to move cursor to the right.
3) **Press ▲▼** to select channel number.
4) **Press SET** (or ◀ ▶) to set preset captions.

- Repeat step **4** until the Caption List is complete.

To Make Corrections

Press ▲▼, then **SET** (or ▶) to select channel number
Press ▲▼ to change, or **ADD/DLT** to delete.

---

5 **Press ACTION** three times to end setup.

Channel Caption is ...
Station names, e.g. ABC, CNN, etc. are set so they will appear when a channel is selected. Choose 24 preset names.

Ready Checklist

☐ You need a list of stations and the channel numbers you receive them on.

☑ Ready Checklist

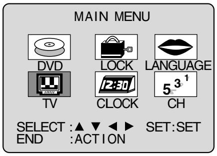
☐ It is necessary to enter TV mode by pressing TV/VCR before selecting “CH” on the MAIN MENU.

Remote Warning Feature

When Universal Remote Control (page 32) is used, and this feature is set to “ON,” a warning appears whenever an invalid key is pressed in DSS or Cable mode.

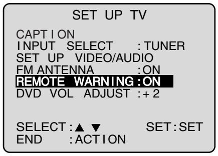
1 **Press ACTION** to display MAIN MENU.

2



1) **Press ▲▼◀ ▶** to select “TV.”
2) **Press SET** to display SET UP TV screen.

3



SET UP TV

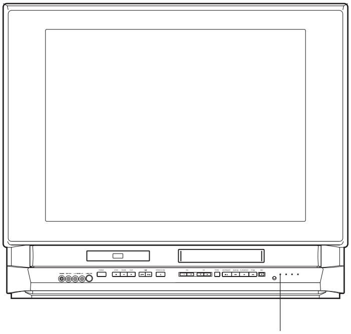
CAPTION
INPUT SELECT :TUNER
SET UP VIDEO/AUDIO
FM ANTENNA :ON
REMOTE WARNING :ON
DVD VOL ADJUST :+2

SELECT : ▲ ▼ SET:SET
END :ACTION

1) **Press ▲▼** to select REMOTE WARNING.
2) **Press SET** to set “ON” or “OFF.”

- “REMOTE WARNING : OFF”
  ➔ Remote warning will not appear even if invalid key is pressed.

4 **Press ACTION** twice to return to normal screen.

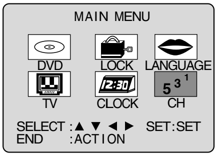


Weak Signal Display Feature

When “ON” is selected, the picture is displayed even when a broadcast signal is weak or non-existent.

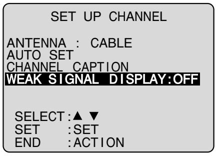
1 **Press ACTION** to display MAIN MENU.

2



1) **Press ▲▼◀ ▶** to select “CH.”
2) **Press SET** to display SET UP CHANNEL screen.

3



SET UP CHANNEL

ANTENNA : CABLE
AUTO SET
CHANNEL CAPTION
WEAK SIGNAL DISPLAY:OFF

SELECT : ▲ ▼
SET :SET
END :ACTION

1) **Press ▲▼** to select WEAK SIGNAL DISPLAY.
2) **Press SET** to set “ON” or “OFF.”

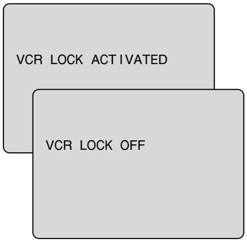
Notes

- “ON” = Picture is displayed regardless of signal condition, and may not always be clearly visible.
  “OFF”= Screen turns solid blue when signal is absent or weak.
- If unit is connected to equipment which has blue back feature, selecting “ON” will have no effect on the other equipment.

4 **Press ACTION** twice to return to the normal screen.

VCR Lock

All operations are prohibited except Timer recording and tape eject. Useful for families with small children.



VCR LOCK ACTIVATED

VCR LOCK OFF

In Stop mode, **hold down REC** on the unit without a cassette inserted for 7 seconds to turn “ON.” (Please ignore “NO CASSETTE” warning.)

Repeat above with or without cassette to turn “OFF.”

- VCR Lock is canceled automatically after about 24 hours if clock is set.
- “Auto Power On” is not prohibited when VCR Lock is activated.

V-Chip Control Feature

V-Chip Control Feature is...

This unit has a built-in V-Chip Control which allows you to block unwanted TV usage based on US MOVIES and US TV PROGRAMS Ratings.

Process of V-Chip Control Feature

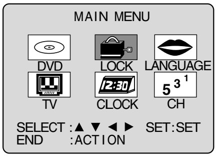
Enter Code ⇨ **Setup** ⇨ **Blocking**

Secret Code

A 4-digit code must be entered to view a blocked program or change rating settings.

1 **Press ACTION***
to display MAIN MENU.

2



MAIN MENU

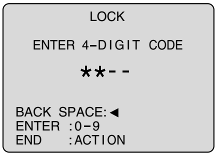
DVD LOCK LANGUAGE

TV CLOCK CH

SELECT :▲ ▼ ◄ ► SET:SET
END :ACTION

1) **Press ▲▼◄ ►** to select “LOCK.”
2) **Press SET** to display LOCK screen.

3



LOCK

ENTER 4-DIGIT CODE

**--

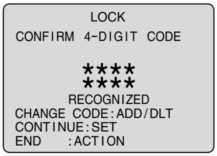
BACK SPACE:◄
ENTER :0-9
END :ACTION

1) **Press number keys** to enter your secret code.
2) **Enter same code** again for confirmation.

- Step 2) not necessary when changing rating or secret code.
- Take care that you are not observed entering the secret code.

To Make Corrections
Press ◄ repeatedly to move the cursor.
Press number keys to make the correction.

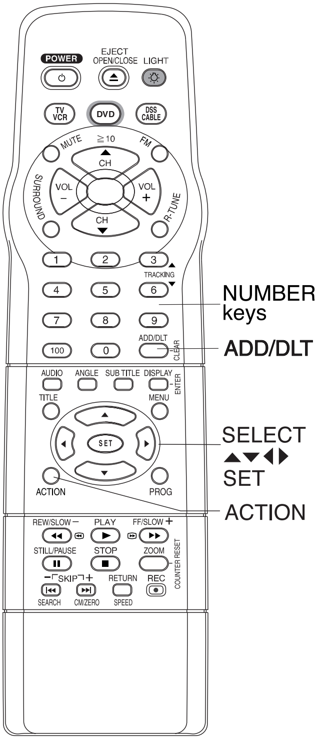
4



LOCK
CONFIRM 4-DIGIT CODE

****
****
RECOGNIZED
CHANGE CODE:ADD/DLT
CONTINUE:SET
END :ACTION

Press SET to display LOCK MENU (see pages 41, 42).
Or
Press ACTION twice to exit.


POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
1
2
3
4
5
6
7
8
9
TRACKING
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
TITLE
MENU
ENTER
SET
ACTION
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
COUNTER RESET
SEARCH
CM/ZERO
SPEED
NUMBER keys
ADD/DLT
SELECT ▲▼◄►
SET
ACTION

Changing your secret code

- You will need your current code.

Do steps **1** ~ **3**. In step **4**, **press ADD/DLT** to clear current code.
Repeat steps **3** and **4** to enter new code.

Notes

- Some rental movies do not include V-Chip data.
- DO NOT forget your secret code.
- Once ratings are set, restricted tapes or programs cannot be accessed unless the secret code is entered.

*Important: If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

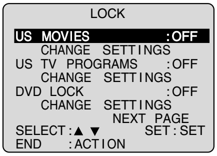
If LOCK menu is not displayed, do “Secret Code” steps on page 40.

Process of V-Chip Control Feature

Enter Code ⇨ **Setup** ⇨ **Blocking**

US MOVIES Ratings

1



```
            LOCK
US MOVIES             :OFF
    CHANGE SETTINGS
US TV PROGRAMS        :OFF
    CHANGE SETTINGS
DVD LOCK              :OFF
    CHANGE SETTINGS
              NEXT PAGE
SELECT:▲ ▼        SET:SET
END    :ACTION
```

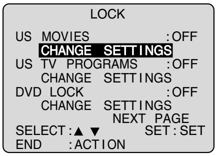
1) **Press ▲▼** to select US MOVIES.
2) **Press SET** to set “ON” or “OFF.”

- ■ **“ON” → V-Chip Control is activated.**
- ■ **“OFF” → V-Chip Control is deactivated.**

Note

- “NEXT PAGE” displays CANADIAN V-Chip setting menu. Not necessary except when viewing Canadian tapes or broadcasts.

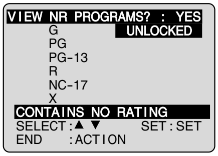
2



```
            LOCK
US MOVIES             :OFF
    CHANGE SETTINGS
US TV PROGRAMS        :OFF
    CHANGE SETTINGS
DVD LOCK              :OFF
    CHANGE SETTINGS
              NEXT PAGE
SELECT:▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼** to select CHANGE SETTINGS.
2) **Press SET** to display screen.

3

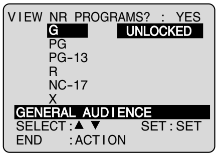


```
VIEW NR PROGRAMS? : YES
       G          UNLOCKED
       PG
       PG-13
       R
       NC-17
       X
CONTAINS NO RATING
SELECT:▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼** to select VIEW NR PROGRAMS?.
2) **Press SET** to set “YES” or “NO.”

NR (Not Rated) PROGRAMS
Some movies, such as old movies or foreign movies usually have no ratings.

4



```
VIEW NR PROGRAMS? : YES
       G          UNLOCKED
       PG
       PG-13
       R
       NC-17
       X
GENERAL AUDIENCE
SELECT:▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼** to select and **SET** to set ratings to be blocked. (See ratings chart on this page.)

---

5 **Press ACTION** to redisplay LOCK menu and continue with US TV PROGRAMS Ratings Setup (next page).
Or, **press ACTION** three times to exit.

US MOVIES RATINGS

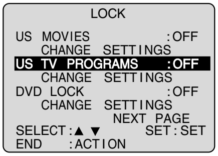
G	**GENERAL AUDIENCE:** All ages admitted.
PG	**PARENTAL GUIDANCE:** Some material may not be suitable for children.
PG-13	**PARENTS CAUTIONED:** Some material may be inappropriate for children under 13.
R	**RESTRICTED:** Children under 17 must be accompanied by a parent or adult.
NC-17	**OVER AGE 17 ONLY:** No one 17 and under admitted.
X	**ADULTS ONLY:**

V-Chip Control Feature (continued)

If LOCK menu is not displayed, do "Secret Code" steps on page 40.

US TV PROGRAMS Ratings

1



```
            LOCK
US  MOVIES              :OFF
    CHANGE  SETTINGS
US  TV  PROGRAMS        :OFF
    CHANGE  SETTINGS
DVD  LOCK               :OFF
    CHANGE  SETTINGS
               NEXT  PAGE
SELECT:▲ ▼           SET:SET
END    :ACTION
```

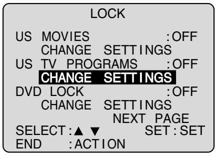
1) **Press ▲▼*** to select US TV PROGRAMS.
2) **Press SET** to set "ON" or "OFF."

- ■ **"ON" ➔ V-Chip Control is activated.**
- ■ **"OFF" ➔ V-Chip Control is deactivated.**

Note

- "NEXT PAGE" displays CANADIAN V-Chip setting menu. Not necessary except when viewing Canadian tapes or broadcasts.

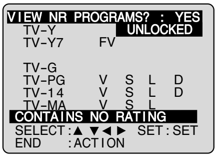
2



```
            LOCK
US  MOVIES              :OFF
    CHANGE  SETTINGS
US  TV  PROGRAMS        :OFF
    CHANGE  SETTINGS
DVD  LOCK               :OFF
    CHANGE  SETTINGS
               NEXT  PAGE
SELECT:▲ ▼           SET:SET
END    :ACTION
```

1) **Press ▲▼** to select CHANGE SETTINGS.
2) **Press SET** to display screen.

3

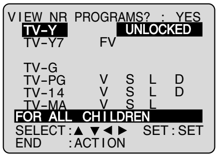


```
VIEW NR PROGRAMS?  :  YES
  TV-Y               UNLOCKED
  TV-Y7       FV

  TV-G
  TV-PG       V   S   L   D
  TV-14       V   S   L   D
  TV-MA       V   S   L
CONTAINS  NO  RATING
SELECT:▲ ▼◀ ▶     SET:SET
END     :ACTION
```

1) **Press ▲▼** to select VIEW NR PROGRAMS?.
2) **Press SET** to set "YES" or "NO."

NR (Not Rated) PROGRAMS
Some TV shows, such as news, sports, weather, bulletins, emergency information usually have no ratings.

4



```
VIEW NR PROGRAMS?  :  YES
  TV-Y               UNLOCKED
  TV-Y7       FV

  TV-G
  TV-PG       V   S   L   D
  TV-14       V   S   L   D
  TV-MA       V   S   L
FOR  ALL  CHILDREN
SELECT:▲ ▼◀ ▶      SET:SET
END     :ACTION
```

1) **Press ▲▼** to select and **SET** to set ratings to be blocked. (See ratings charts on this page.)

Note

You may select from standard TV ratings (chart 1), or customize to a specific content rating (chart 2).

- Ratings highlighted in Green will be blocked. Ratings in white letters will not be blocked.

5 **Press ACTION** four times to exit this mode.

Process of V-Chip Control Feature

Enter Code ⇨ Setup ⇨ Blocking

US TV PROGRAMS RATINGS: Chart 1

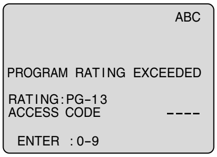
TV-Y	**FOR ALL CHILDREN:** Content specifically geared to young viewers ages 2-6.
TV-Y7	**FOR AGE 7 AND OLDER:** May contain mild physical or comedic violence which may frighten children under 7.
TV-G	**GENERAL AUDIENCE:** Contains little or no violence, strong language, or sexual dialogue or situations.
TV-PG	**PARENTAL GUIDANCE:** May contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
TV-14	**PARENTS CAUTIONED:** May contain sophisticated themes, sexual situations, strong language, and more intense violence.
TV-MA	**MATURE AUDIENCE:** May contain mature themes, profane language, graphic violence, and sexual situations.

US TV PROGRAMS RATINGS: Chart 2

FV	Fantasy Violence
V	Violence
S	Sexual Situations
L	Adult Language
D	Sexually Suggestive Dialogue

Blocking Message

<When V-Chip Control is activated>



```
                         ABC

PROGRAM RATING EXCEEDED

RATING:PG-13
ACCESS CODE           ----

 ENTER  :0-9
```

- If a program or movie exceeds the ratings you have set, a message will appear on a black background and sound is muted.

To View a Blocked Program / Movie

[Temporarily Deactivate V-Chip Control]

Enter your secret code (ACCESS CODE) in the Blocking Message screen.

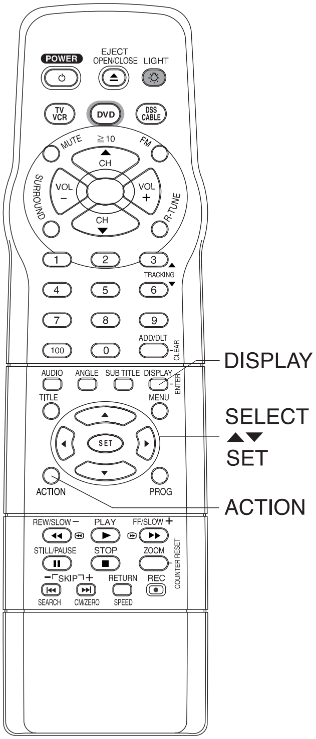
- V-Chip Control is reactivated when power is turned off or power failure occurs.

[Deactivate V-Chip Control]

Enter your secret code (steps 1-4 page 40). Then, set US MOVIES and/or US TV PROGRAMS to “OFF” using ▲▼ and **SET**. (Ratings set on pages 41, 42 are retained and will be in effect when V-Chip Control is activated again.)

Process of V-Chip Control Feature

Enter Code ⇨ Setup ⇨ **Blocking**


DISPLAY
SELECT
▲▼
SET
ACTION
POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL
SURROUND
R-TUNE
TRACKING
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
ENTER
TITLE
MENU
PROG
REW/SLOW
PLAY
FF/SLOW
STILL/PAUSE
STOP
ZOOM
SKIP
RETURN
REC
SEARCH
CM/ZERO
SPEED
COUNTER RESET

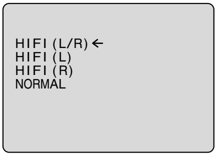
Audio Features

Audio Mode for Playback

Choose the type of sound track for playback.

1 See the “**Playback a Tape**” section on page 18 to playback the tape.

2



- This screen appears when you **press AUDIO** during playback.

Press AUDIO repeatedly (each press within 5 seconds) to select desired mode.

- Select “HIFI (L/R)”, “HIFI (L)” or “HIFI (R)” to listen to stereo recordings in stereo sound. Select “NORMAL” for monaural sound.

Audio Mode for Recording

Choose audio mode to match recording type.

1 **Press AUDIO** repeatedly to select the audio mode according to the type of broadcast to be recorded.

- The Audio mode selected stays in effect until it is changed.

2 See the “**Record On a Tape**” section on page 18 to do a recording.

Notes

- Only tapes recorded in Hi-Fi stereo will playback with true stereo sound. Standard stereo tapes will playback with monaural sound.
- To listen to Hi-Fi stereo playback, the unit AUDIO (L/R) jacks must be connected to a stereo amp and speakers.
- There may be a difference in audio level between Hi-Fi and normal audio playback.

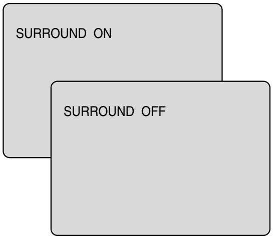
With the proper audio mode setting, your unit can:

- record and playback MTS stereo broadcast (main language) in stereo Hi-Fi. Stereo sound is recorded on the left and right audio tracks and on the video portion of a tape.
- record and playback a monaural broadcast (main language) or SAP (Secondary Audio Program, usually in a second language) on the Hi-Fi tracks for better quality monaural sound.
- playback non-Hi-Fi tapes in monaural.

Surround Sound System

You can hear a deeper, 3-D sound effect using just the unit's two front speakers.

Set Surround sound.

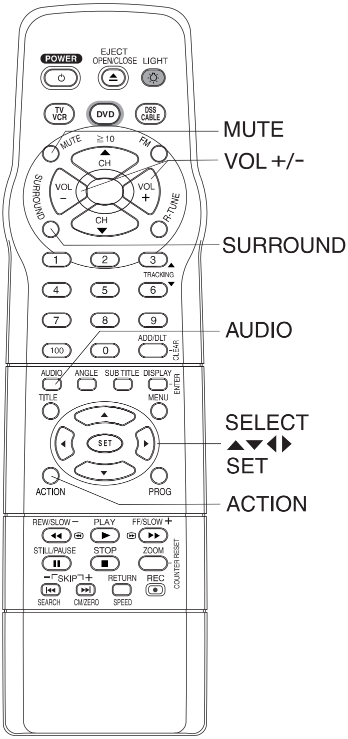

SURROUND ON
SURROUND OFF

Press SURROUND.
- "SURROUND ON" is displayed.

To Cancel, press SURROUND.

Notes

- Surround sound effect is not available for normal (mono) broadcasts.
- The surround effect (TV, VCR mode only) is not output to Audio Output L/R Connector.


MUTE
VOL +/-
SURROUND
AUDIO
SELECT
▲▼◀▶
SET
ACTION

Video / Audio Menu

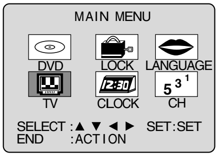
***Important:** If a remote control button does not work when pressed, press the TV/VCR button on the remote and try the button again.

This feature allows easy setting of picture and sound suitable for each program source.

Video Menu

1 **Press ACTION*** to display MAIN MENU.

2



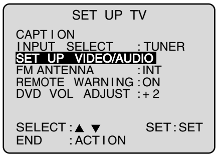
MAIN MENU

DVD
LOCK
LANGUAGE
TV
CLOCK
CH

SELECT : ▲ ▼ ◀ ▶ SET:SET
END :ACTION

1) **Press ▲▼◀ ▶** to select "TV."
2) **Press SET** to display SET UP TV screen.

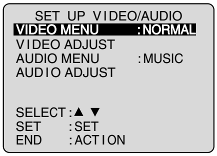
3



SET UP TV
CAPTION
INPUT SELECT :TUNER
SET UP VIDEO/AUDIO
FM ANTENNA :INT
REMOTE WARNING :ON
DVD VOL ADJUST :+2
SELECT : ▲ ▼ SET:SET
END :ACTION

1) **Press ▲▼** to select "SET UP VIDEO/AUDIO."
2) **Press SET** to display.

4



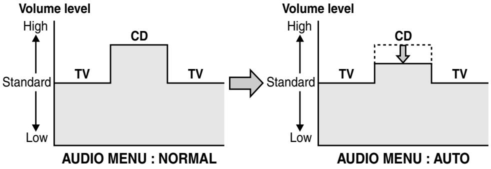
SET UP VIDEO/AUDIO
VIDEO MENU :NORMAL
VIDEO ADJUST
AUDIO MENU :MUSIC
AUDIO ADJUST
SELECT : ▲ ▼
SET :SET
END :ACTION

1) **Press ▲▼** to select "VIDEO MENU."
2) **Press SET** repeatedly to select desired mode. (See below.)

5 **Press ACTION** three times to end setup.

[Video Menu]

NORMAL
Factory setting.
MOVIE
Picture is adjusted for a Movie-like feel.
NIGHT
Color and picture intensity are adjusted to be easier on the eyes for night viewing.

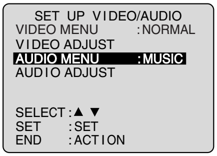


<Audio AGC Example>

Audio Menu

a **Do steps 1 - 3 left.**

b



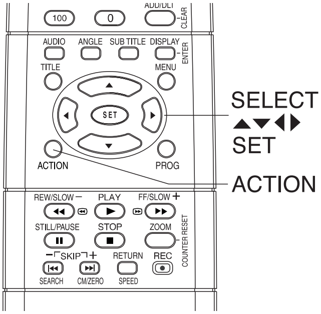
SET UP VIDEO/AUDIO
VIDEO MENU :NORMAL
VIDEO ADJUST
AUDIO MENU :MUSIC
AUDIO ADJUST
SELECT : ▲ ▼
SET :SET
END :ACTION

1) **Press ▲▼** to select "AUDIO MENU."
2) **Press SET** to select desired mode. (See below.)

c **Press ACTION** three times to end setup.

[Audio Menu]

NORMAL
Factory setting
AUTO
[Audio AGC (Auto Gain Control)**]**
The sound level is automatically adjusted to suit the program source (see below left).
MOVIE
Sound suited to movies.
MUSIC
Sound suited to music.
SPEECH
Sound suited to dialog.



ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW –
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
– SKIP +
RETURN
REC
SEARCH
CM/ZERO
SPEED
SELECT
▲▼◀▶
SET
ACTION

Notes

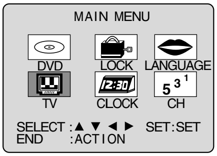
- The effects of this feature on the signal is not output to the Audio/Video Output Connector.
- When AUDIO MENU mode is "AUTO," the AUDIO ADJUST setting will be "STANDARD."
- AUDIO MENU settings remain in memory.
- VIDEO MENU settings do not remain in memory.

Video / Audio Adjustment

Video Adjustment

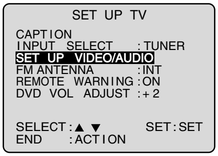
1 **Press ACTION** to display MAIN MENU.

2


MAIN MENU
DVD
LOCK
LANGUAGE
TV
12:30
CLOCK
5 3 1
CH
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

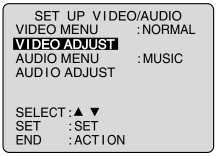
1) **Press ▲▼◀▶** to select "TV."
2) **Press SET** to display SET UP TV screen.

3


SET UP TV
CAPTION
INPUT SELECT : TUNER
SET UP VIDEO/AUDIO
FM ANTENNA : INT
REMOTE WARNING : ON
DVD VOL ADJUST : + 2
SELECT : ▲ ▼ SET : SET
END : ACTION

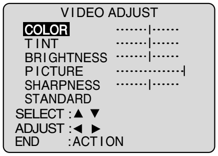
1) **Press ▲▼** to select "SET UP VIDEO/AUDIO."
2) **Press SET** to display.

4


SET UP VIDEO/AUDIO
VIDEO MENU : NORMAL
VIDEO ADJUST
AUDIO MENU : MUSIC
AUDIO ADJUST
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "VIDEO ADJUST."
2) **Press SET** to display.

5


VIDEO ADJUST
COLOR
TINT
BRIGHTNESS
PICTURE
SHARPNESS
STANDARD
SELECT : ▲ ▼
ADJUST : ◀ ▶
END : ACTION

1) **Press ▲▼** to select an item. (See below.)
2) **Press ◀ ▶** to adjust.

To Reset VIDEO Controls.
Press ▲▼ and **SET** to select and set "STANDARD." All controls return to their factory settings.

6 **Press ACTION** four times to end setup.

[VIDEO Adjustment]

COLOR Control
Adjust color intensity.

TINT Control
Adjust for natural flesh tones.

BRIGHTNESS Control
Adjust picture brightness.

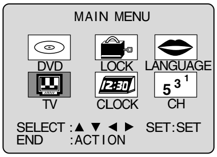
PICTURE Control
Adjust picture intensity by adjusting both contrast and color level in the proper balance.

SHARPNESS Control
Adjust picture sharpness.

Audio Adjustment

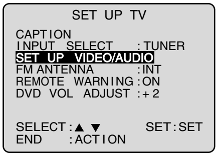
a **Press ACTION** to display MAIN MENU.

b


MAIN MENU
DVD
LOCK
LANGUAGE
TV
12:30
CLOCK
5 3 1
CH
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

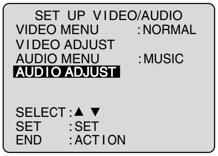
1) **Press ▲▼◀▶** to select "TV."
2) **Press SET** to display SET UP TV screen.

c


SET UP TV
CAPTION
INPUT SELECT : TUNER
SET UP VIDEO/AUDIO
FM ANTENNA : INT
REMOTE WARNING : ON
DVD VOL ADJUST : + 2
SELECT : ▲ ▼ SET : SET
END : ACTION

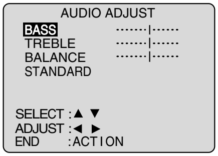
1) **Press ▲▼** to select "SET UP VIDEO/AUDIO."
2) **Press SET** to display.

d


SET UP VIDEO/AUDIO
VIDEO MENU : NORMAL
VIDEO ADJUST
AUDIO MENU : MUSIC
AUDIO ADJUST
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "AUDIO ADJUST."
2) **Press SET** to display.

e


AUDIO ADJUST
BASS
TREBLE
BALANCE
STANDARD
SELECT : ▲ ▼
ADJUST : ◀ ▶
END : ACTION

1) **Press ▲▼** to select an item. (See below.)
2) **Press ◀ ▶** to adjust.

To Reset AUDIO Controls.
Press ▲▼ and **SET** to select and set "STANDARD." All controls return to their factory settings.

f **Press ACTION** four times to end setup.

[AUDIO Adjustment]

BASS Control
To adjust the intensity of low frequency sound.

TREBLE Control
To adjust the intensity of high frequency sound.

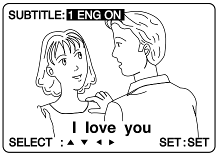
BALANCE Control
To adjust the (L/R) unit speaker output level.

- The levels set here do not affect other audio equipment when connected to the Audio Output L/R Connector.

Subtitle Language (DVD only)

You can select a different subtitle language (if offered) than the one set at the Settings for DVD Operation. (See page 57.)

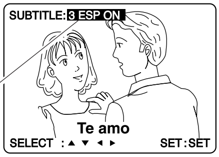
1



Press SUB TITLE* in Play mode to display the subtitle selection on-screen.

- Display disappears after 5 seconds.
- When no subtitles are offered, "-" will be displayed instead of the language number.

2



Number of subtitle language being played back.

1) **Press ▲▼** to select desired language.
2) **Press ►** (or ◄) to set.
3) **Press ▲** (or ▼) to select "ON" or "OFF."

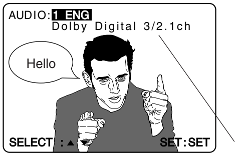
Notes

- When closed captioning is used along with subtitles, they may overlap. If so, turn one function off. (See pages 24 and 25.)
- If after several presses of the button the language does not change, language selection is not offered on the disc.
- Subtitles may not change to the selected language immediately.
- When power is turned on again or disc is removed, subtitles revert to initial setting language. If the initial language is not recorded on the disc, the disc's priority language will appear.

Audio Soundtrack Language (DVD only)

You can change the audio soundtrack language, selected at the Settings for DVD Operation, to a different language if available. (See page 57.)
(This operation works only with discs on which multiple audio soundtrack languages are recorded.)

a

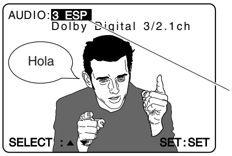


Press AUDIO in Play mode to display the audio selection on-screen.

- Display disappears after 5 seconds.

Audio attribute 1 type, sampling frequency, bit No. of the disc.

b



1) **Press ▲▼** to select desired language.

Number of the audio soundtrack language being played back.

Ready Checklist

☐ Please read "Basic DVD Operation" on page 20.

[Subtitle language (No.)]
[Audio sound track language (No.)]

ENG	English
FRA	French
DEU	German
ITA	Italian
ESP	Spanish
NLD	Dutch
SVE	Swedish
NOR	Norwegian
DAN	Danish
POR	Portuguese
RUS	Russian
JPN	Japanese
CHI	Chinese
KOR	Korean
MAL	Malay
VIE	Vietnamese
THA	Thai
	Other

- Change the No. by **pressing ▲▼**, and **press SET**.

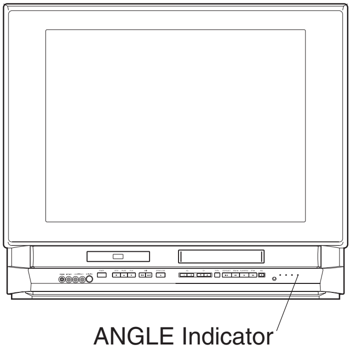
[Audio attribute 1 type, sampling frequency, bit No. of the disc (see page 58)]

LPCM	**96KHz or 48KHz**	**16bit**	**Linear PCM disc**
		20bit	
		24bit	
Dolby Digital	**1ch - 5.1ch**		**Dolby Digital disc**
DTS	**1ch - 5.1ch**		**DTS disc**

Notes

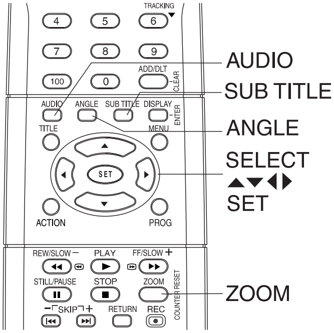
- If, after several presses of the button the language does not change, language selection is not offered on the disc.
- When power is turned on again or disc is removed, language reverts to initial setting. If this language is not recorded on the disc, the language recorded will be heard.

When ⊘ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.


ANGLE Indicator

Notes

- ANGLE Indicator lights up on the unit when a scene recorded at different angles is detected.
- The angle number can be set beforehand so that the angle is switched whenever ANGLE Indicator lights up.


TRACKING
4
5
6
7
8
9
100
0
ADD/DLT
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW –
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
COUNTER RESET
–SKIP+
RETURN
REC
AUDIO
SUB TITLE
ANGLE
SELECT
▲▼◀▶
SET
ZOOM

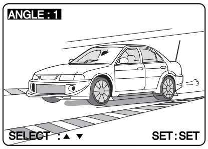
Notes

- Closed captioning will not be displayed while Picture Zoom is used. To see subtitles, set the subtitle feature to ON (see page 48).
- The subtitle cannot be enlarged nor can it's position be changed.
- The picture zoom feature does not work with a Video CD.
- During picture zoom, "ZOOM1" or "ZOOM2" is displayed on-screen.
- Zooming, on some discs, may result in poor picture quality, or not operate.

Multiple Angle Viewing (DVD only)

DVDs may contain scenes shot from multiple camera angles allowing the same scene to be viewed at different angles. You can view these angles, if available, using the ANGLE button.

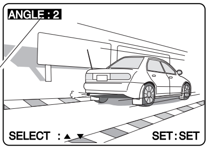
1


ANGLE : 1
SELECT : ▲ ▼
SET : SET

Press ANGLE in Play mode to display the angle selection on-screen.

- Display disappears after 5 seconds.

2


ANGLE : 2
SELECT : ▲ ▼
SET : SET

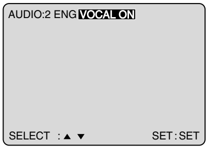
Press ▲▼ to select the desired angle.

Number of angle being played back.

Vocal selection for Karaoke discs (DVD/Video CD)

a **Press AUDIO** in Play mode to display the audio screen.

b


AUDIO:2 ENG VOCAL ON
SELECT : ▲ ▼
SET : SET

1) Press ▲▼ (or ◀ ▶) to select as shown below.
2) Press ▶ (or ◀) to set. (DVD only)

- DVD Karaoke (1 vocal) VOCAL ON ↔ VOCAL OFF
- DVD Karaoke (2 vocals) VOCAL V1 + V2 → VOCAL V1 → VOCAL V2 → VOCAL OFF
- Video CD LR → L → R

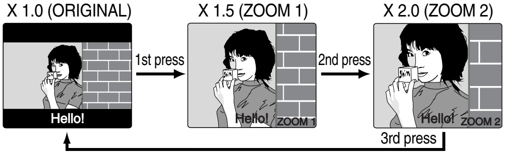
Picture Zoom (DVD only)

You can enlarge specific portions of a picture and select the zoom ratio using the ZOOM button on the remote during DVD playback.

Set Zoom size.

Press ZOOM repeatedly to change display as follows.

- You can enlarge the center portion of the image to one of 2 magnifications.

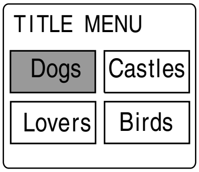

X 1.0 (ORIGINAL)
X 1.5 (ZOOM 1)
X 2.0 (ZOOM 2)
1st press
2nd press
3rd press
Hello!
Hello!
ZOOM 1
Hello!
ZOOM 2

Use the ▲, ▼, ◀ and ▶ buttons to move the position up, down, left and right.

Title menu (DVD only)

Some DVDs have more than one title, e.g. movies. If the disc offers a title menu, you can select the desired title number. (Operation may vary according to the disc.)

1

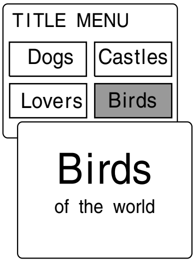

TITLE MENU
Dogs
Castles
Lovers
Birds

<Example>

Press TITLE* in Play mode to display title screen.

- **Pressing TITLE** again resumes play from the scene when TITLE was first pressed.

2


TITLE MENU
Dogs
Castles
Lovers
Birds
Birds
of the world

<Example>

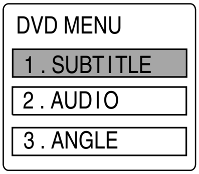
1) **Press ▲▼◀▶** or **number Key(s)** to select a title.
2) **Press SET** or **PLAY** to start play.

- Step 2) not necessary when using number key(s).

DVD menu (DVD only)

DVDs may offer a special menu. This menu may include guides to unique contents, audio/subtitle languages, etc. Although contents and operation may vary, the following steps show basic steps for using the menu.

a

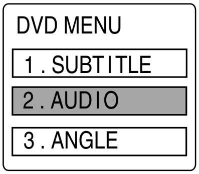

DVD MENU
1 . SUBTITLE
2 . AUDIO
3 . ANGLE

<Example>

Press MENU in Play mode to display DVD menu.

- **Pressing MENU** again resumes play from the scene when MENU was first pressed.

b


DVD MENU
1 . SUBTITLE
2 . AUDIO
3 . ANGLE

<Example>

1) **Press ▲▼◀▶** or **number key(s)** to select an item.
2) **Press SET** or **PLAY** to access.

- Step 2) not necessary when using number key(s).

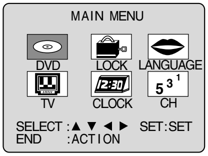
Repeat step "b" if more than one menu.

Program Play (Video CD/CD)

You can program specific tracks and order of play.

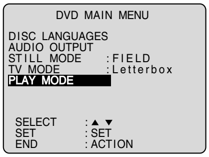
1 **Press ACTION** in Stop mode to display MAIN MENU.

2


MAIN MENU
DVD
LOCK
LANGUAGE
TV
CLOCK
CH
SELECT : ▲ ▼ ◀ ▶
SET : SET
END : ACTION

1) **Press ▲▼◀▶** to select "DVD."
2) **Press SET** to display screen.

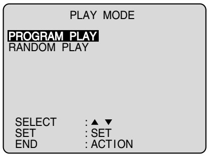
3


DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
PLAY MODE
SELECT : ▲ ▼
SET : SET
END : ACTION

STILL MODE : FIELD
TV MODE : Letterbox

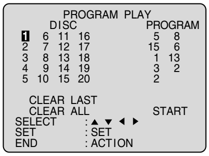
1) **Press ▲▼** to select "PLAY MODE."
2) **Press SET** to display screen.

4


PLAY MODE
PROGRAM PLAY
RANDOM PLAY
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "PROGRAM PLAY."
2) **Press SET** to display screen.

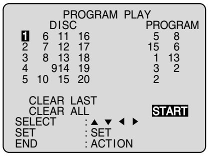
5


PROGRAM PLAY
DISC
PROGRAM
1 6 11 16
2 7 12 17
3 8 13 18
4 9 14 19
5 10 15 20
5 8
15 6
1 13
3 2
2
CLEAR LAST
CLEAR ALL
START
SELECT : ▲ ▼ ◀ ▶
SET : SET
END : ACTION

1) **Press ▲▼◀▶** to select a track number. (Track numbers on disc are displayed.)
2) **Press SET** to set.

- Repeat step 5 to select another track.
- The selected track is added on the right side.

6


PROGRAM PLAY
DISC
PROGRAM
1 6 11 16
2 7 12 17
3 8 13 18
4 914 19
5 10 15 20
5 8
15 6
1 13
3 2
2
CLEAR LAST
CLEAR ALL
START
SELECT : ▲ ▼ ◀ ▶
SET : SET
END : ACTION

1) **Press ▲▼◀▶** to select "START."
2) **Press SET** to start play of programs in the sequence selected.

- To cancel, **press STOP** during play, then **press CLEAR**.

Notes

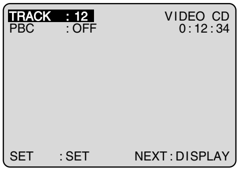
- Up to 15 tracks can be programmed.
- "◀ " or " ▶" (depending on disc) indicates additional PROGRAM PLAY screen. **Press ▲▼◀▶** for next or previous screen.
- **To clear the last program one by one, Press ▲▼◀▶** to move to "CLEAR LAST" and **press SET**. (**Pressing CLEAR** also clears last program.)
- **To clear all programs, Press ▲▼◀▶** to move to "CLEAR ALL" and **press SET**. (Programs are also cleared when the power is turned off or the disc is removed.)

Program Repeat Play (Video CD/CD)

a **Do steps 1 through 6 on previous page.**

b **Press DISPLAY** to display Disc Information screen.

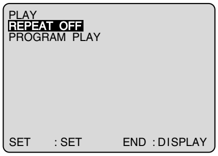
(Disc Information Screen)


TRACK : 12
PBC : OFF
VIDEO CD
0:12:34
SET : SET
NEXT : DISPLAY

c **Press DISPLAY** again to display Unit Information screen.

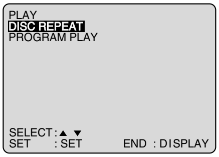
d **Press SET** to enter Select mode. ("REPEAT OFF" will flash.)

(Unit Information Screen)


PLAY
REPEAT OFF
PROGRAM PLAY
SET : SET
END : DISPLAY

e **Press ▲▼** to select "DISC REPEAT."

(Unit Information Screen)


PLAY
DISC REPEAT
PROGRAM PLAY
SELECT : ▲ ▼
SET : SET
END : DISPLAY

f **Press SET** to set mode. ("DISC REPEAT" stops flashing.)
To cancel, select "REPEAT OFF" in step **e**, then **press SET**.

Ready Checklist

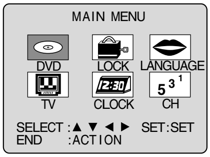
☐ Unit is in TV-VCR mode, press TV/VCR.
☐ Video CD or CD is inserted.

Random Play (Video CD/CD)

Tracks are played in a random order.

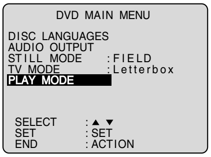
1 **Press ACTION** in Stop mode to display MAIN MENU.

2


MAIN MENU
SELECT : ▲ ▼ ◀ ▶ SET : SET
END : ACTION

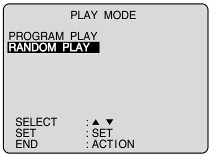
1) **Press ▲▼◀▶** to select "DVD."
2) **Press SET** to display screen.

3


DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FIELD
TV MODE : Letterbox
PLAY MODE
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "PLAY MODE."
2) **Press SET** to display screen.

4


PLAY MODE
PROGRAM PLAY
RANDOM PLAY
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "RANDOM PLAY."
2) **Press SET** to begin random play.

- To cancel, **press STOP** during play, then **press CLEAR**.

MP3 Playback Operation

***Important:** If a remote control button does not work when pressed, press the DVD button on the remote and try the button again.

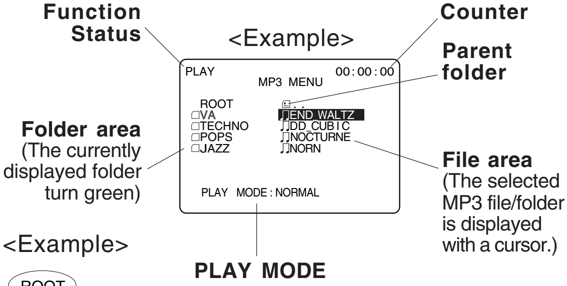
MP3 Playback

You can use this unit to play MP3 format audio recorded for personal use with a computer etc. onto a CD-R or CD-RW. Play may not be possible in some cases due to the condition of the recording.

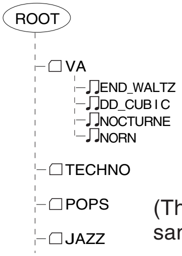
1 **Press POWER** on the remote or DECK.

2 **Press OPEN/CLOSE,**
and then place a MP3 disc into the disc tray.
Press OPEN/CLOSE to close.

3 Display MP3 MENU and start playing automatically. (The MP3 CD layer is displayed.)


Function Status
<Example>
Counter
PLAY
00:00:00
MP3 MENU
Parent folder
ROOT
VA
TECHNO
POPS
JAZZ
END_WALTZ
DD_CUBIC
NOCTURNE
NORN
Folder area
(The currently displayed folder turn green)
File area
(The selected MP3 file/folder is displayed with a cursor.)
PLAY MODE : NORMAL
PLAY MODE

<Example>


ROOT
VA
END_WALTZ
DD_CUBIC
NOCTURNE
NORN
TECHNO
POPS
JAZZ

♫ : **MP3 file**
▢ : **Folder**
↰ : **Parent folder**

(The disc layer composition of the sample OSD above is displayed.)

Forward/Reverse Search
Press FF/SLOW+ or **RR/SLOW-** during play.
Press PLAY to release.

- Search speed, slow at first, increases with each additional press of the button up to 4 levels.

Forward/Reverse Track Skip
Press SKIP ▶▶I or **I◀◀ SKIP** during play.
Each press skips a track.

- If pressed within first 3 seconds of playback, skips to the previous track. If over 3 seconds, returns to first of that track. (**I◀◀ SKIP** only.)
- Only the **SKIP ▶▶I** or **I◀◀ SKIP** button can be used for track skip selection during playback. Place unit into Stop mode before performing folder/file selection (see above right.)

4 **Press STOP** to stop playing.

5 **Press OPEN/CLOSE** to eject the disc.
The MP3 MENU is closed automatically.

MP3 playback (During STOP mode)
1) **Press ▲▼** to select an MP3 file (♫).
2) **Press SET** or **PLAY** to start playback.

Select folder (During STOP mode)
1) **Press ▲▼** to select a folder (▢).
2) **Press SET** displays files/folders contained in the folder.

Select parent folder (During STOP mode)
1) **Press ▲▼** to select a folder (↰).
2) **Press SET** changes to the previous layer display.

Note

- Folder area operation cannot be done. Only file area operation is possible.

Select PLAY MODE (During STOP mode)
1) **Press ◀ ▶** moves the cursor to PLAY MODE.
2) **Press ▲▼** to select the desired PLAY MODE (see below).

[PLAY MODE]

NORMAL:
All MP3 files are selected and played back one time only.

SINGLE REPEAT:
The selected MP3 file is played back repeatedly.

FOLDER REPEAT:
The MP3 files contained in the selected folder are played back repeatedly.
However, folders below the selected folder are not played back.

DISC REPEAT:
All MP3 files are played back repeatedly.

DVD Operation using On-Screen Displays

When DISPLAY is pressed, On-Screen Displays show disc information (title/chapter/track number, elapsed playing time) and unit information (repeat play, Play mode).

1 **Press DISPLAY** in Play or Stop mode to display “On-Screen Display.”

- Each **press** of **DISPLAY** changes the on-screen display as follows. (Please refer to page 54 or 55.)

→ Selected disc information
↓
Selected unit information
↓
Normal Screen

Note

DISPLAY button does not function while DVD TITLE MENU is displayed.

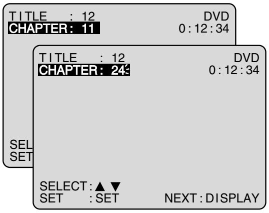
---

2 1) **Press ▲▼** (or ◀ ▶) to select an item.
2) **Press SET** to set.

---

3 1) **Press ▲▼** to select the setting.
2) **Press SET** to set.

<Example of DVD>



```
TITLE    : 12                 DVD
CHAPTER : 11              0:12:34
SEL
SET
```

```
TITLE    : 12                 DVD
CHAPTER : 24              0:12:34

SELECT : ▲ ▼
SET     : SET       NEXT : DISPLAY
```

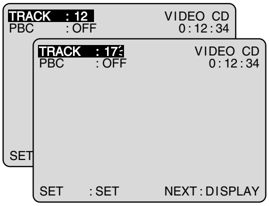
- For some functions the setting will be registered immediately without **pressing SET**.
- When numbers are displayed (e.g. title number), the number keys are also available.

To make corrections, press ▲▼ and **SET** repeatedly to move to error, then correct.

- **Pressing ▶** is effective for elapsing time instead of the above buttons. **Press ◀** repeatedly to delete the error, then correct.

To return to the normal screen, press CLEAR or **DISPLAY** repeatedly.

<Example of Video CD>



```
TRACK   : 12            VIDEO CD
PBC     : OFF            0:12:34
SET
```

```
TRACK   : 17            VIDEO CD
PBC     : OFF            0:12:34

SET     : SET     NEXT : DISPLAY
```

Ready Checklist

☐ Unit is in DVD mode, press DVD.

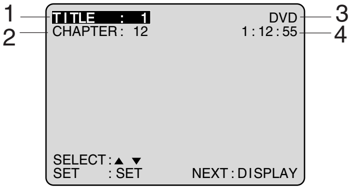
Notes

- When **DISPLAY** is pressed during playback of a Video CD with Playback control, the **number keys** are not available on the displayed screen. In this case, **press DISPLAY** again to remove the displayed screen.
- When ⊘ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

DVD Operation using On-Screen Displays (continued)

Detailed Descriptions of Each On-Screen Display

Disc information screen (for DVD)



TITLE : 1 DVD
CHAPTER : 12 1 : 12 : 55

SELECT : ▲ ▼
SET : SET NEXT : DISPLAY

1. TITLE No.

- Change the No. by **pressing ▲▼*** or the **number keys**, and **press SET**.

2. Chapter No.

- Change the No. by **pressing ▲▼** or the **number keys**, and **press SET**.

3. Disc currently being played

4. Elapsed playing time

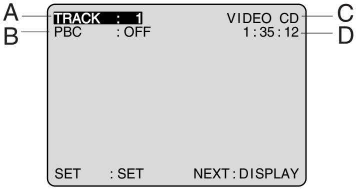
The screen may be changed by selecting the elapsed time.

- Change the elapsed time by **pressing number keys**, and **press SET**.

(e.g.) 01 : 23 : 45 0 ➔ 1 ➔ 2 ➔ 3 ➔ 4 ➔ 5

- This function does not work with some discs.

Disc information screen (for Video CD/ CD)



TRACK : 1 VIDEO CD
PBC : OFF 1 : 35 : 12

SET : SET NEXT : DISPLAY

A. Track No.

- Change the No. by **pressing ▲▼** or the **number keys**, and **press SET**.

B. Playback control ON/OFF

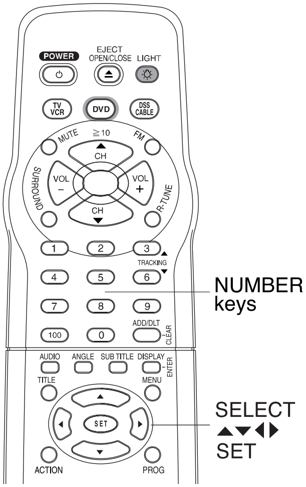
[Video CD with playback control only]

ON	Video CD menu play is displayed.
OFF	Video CD menu play is cleared.

C. Disc currently being played

Video CD	CD

D. Elapsed playing time


POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
SURROUND
VOL −
VOL +
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
NUMBER keys
SELECT ▲▼◀▶
SET

Notes

- Track No. and elapsed playing time are not displayed during play started from menu of Video CDs with playback control.
- When ⃠ appears on the screen while a button is being operated, it means that the corresponding operation is prohibited by the unit or the disc.

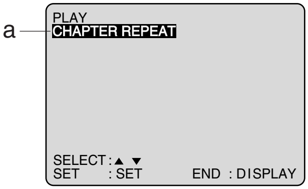
Detailed Descriptions of Each On-Screen Display

Unit information screen

- Change the desired mode during play by **pressing ▲▼**, and **press SET**.

a. Repeat Play

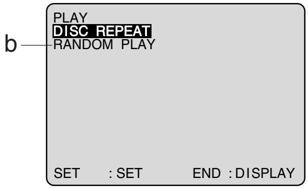
DVD	CHAPTER REPEAT	TITLE REPEAT	REPEAT OFF
Video CD/CD	TRACK REPEAT	DISC REPEAT	REPEAT OFF



PLAY
CHAPTER REPEAT
SELECT : ▲ ▼
SET : SET
END : DISPLAY

b. Play mode [Video CD/ CD only] (See page 53 or 54.)

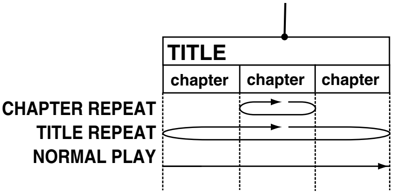
PROGRAM PLAY	program play
RANDOM PLAY	random play
-	normal play



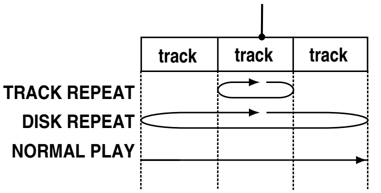
PLAY
DISC REPEAT
RANDOM PLAY
SET : SET
END : DISPLAY

For your reference

• CHAPTER/TITLE REPEAT PLAY (DVD)


CURRENT PLAYBACK POSITION
TITLE
chapter
chapter
chapter
CHAPTER REPEAT
TITLE REPEAT
NORMAL PLAY

• TRACK/DISC REPEAT PLAY (Video CD/CD)


CURRENT PLAYBACK POSITION
track
track
track
TRACK REPEAT
DISK REPEAT
NORMAL PLAY

Note

- For repeat play in VCR mode, see page 36.

DVD Lock Feature

*Important: If a remote control button does not work when pressed, press the TV/VCR, DVD button on the remote and try the button again.

You can prevent playback of DVDs in a specific rating level which may be unsuitable for children.

- Some DVDs are encoded with a rating level. If the disc rating is higher (stricter) than the one you preset, playback will be prohibited.

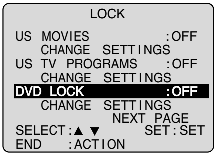
Caution

Discs not encoded with rating level will play even if the jacket states it is for mature audiences. For these discs, the DVD Lock Ratings will not work.

DVD Lock Ratings (DVD only)

Perform DVD Lock setting in TV mode.
Enter your secret code to display LOCK menu.
(Do "Secret Code" steps on page 40.)

1

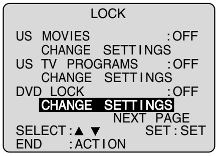


```
           LOCK
US MOVIES             :OFF
    CHANGE SETTINGS
US TV PROGRAMS        :OFF
    CHANGE SETTINGS
DVD LOCK              :OFF
    CHANGE SETTINGS
             NEXT PAGE
SELECT:▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼*** to select "DVD LOCK."
2) **Press SET** to set "ON" or "OFF."

- **"ON" → DVD Lock is activated.**
- **"OFF" → DVD Lock is deactivated.**

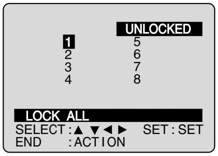
2



```
           LOCK
US MOVIES             :OFF
    CHANGE SETTINGS
US TV PROGRAMS        :OFF
    CHANGE SETTINGS
DVD LOCK              :OFF
    CHANGE SETTINGS
             NEXT PAGE
SELECT:▲ ▼        SET:SET
END    :ACTION
```

1) **Press ▲▼** to select "CHANGE SETTINGS."
2) **Press SET** to display screen.

3



```
                 UNLOCKED
      1             5
      2             6
      3             7
      4             8

 LOCK ALL
SELECT:▲ ▼◀ ▶    SET:SET
END    :ACTION
```

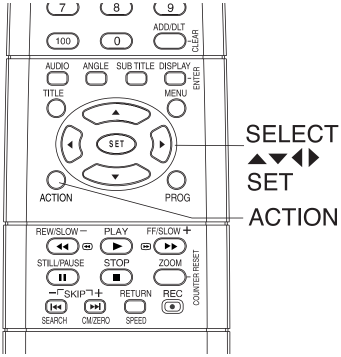
1) **Press ▲▼◀ ▶** to select rating level.
2) **Press SET** to select "LOCKED" or "UNLOCKED."

LEVEL 1 : LOCK ALL:
Playback of all DVDs, CDs and Video CDs is prohibited. (Use to prohibit play of mature theme DVDs not encoded with rating level.)
LEVEL 2 : DVDs expressly for children can be played back.
LEVEL 3 to 7 :
DVDs for general audiences/children can be played back. (DVDs with mature content are prohibited.)
LEVEL 8 : NO LIMIT: (Factory preset)
All DVDs can be played back.

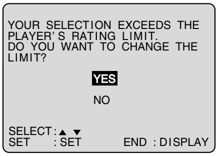
- Ratings which are highlighted in Green will be blocked; those not highlighted (white letters) will not be blocked.

4

Press ACTION three times to end setup.



<When DVD Lock is activated>



```
YOUR SELECTION EXCEEDS THE
PLAYER'S RATING LIMIT.
DO YOU WANT TO CHANGE THE
LIMIT?

           YES

           NO

SELECT:▲ ▼
SET    : SET       END : DISPLAY
```

After DVD Lock is set and a blocked DVD is played, this message will appear. The message may differ depending on the disc.

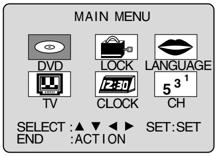
To continue viewing a blocked program for now,
Press ▲▼ to select "YES" and **SET**. Then, enter your 4-digit secret code. When "NO" is selected, blocked programs cannot be viewed.

To change DVD LOCK settings
After entering your secret code in step 3 on page 40,select "OFF" to deactivate DVD Lock or change the rating level.

Settings for DVD Operation

1 **Press ACTION** in Stop mode to display MAIN MENU.

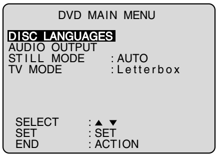
2



```
MAIN MENU
DVD     LOCK    LANGUAGE
TV      CLOCK   CH
SELECT :▲ ▼ ◀ ▶   SET:SET
END    :ACTION
```

1) **Press ▲▼◀▶** to select “DVD.”
2) **Press SET** to display screen.

3



```
DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE     : AUTO
TV MODE        : Letterbox

SELECT   : ▲ ▼
SET      : SET
END      : ACTION
```

1) **Press ▲▼** to select an item.
2) **Press SET** to set.

DISC LANGUAGES (See below.)
Any languages offered on the disc can be set. If a language not offered is set, the original disc language will be selected.

AUDIO OUTPUT (See page 58.)
You can set the audio output that comes from the digital audio output terminal.

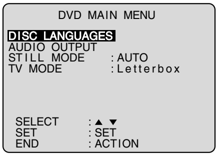
STILL MODE (See page 59.)
To select “FIELD” or “FRAME” to prevent jitter or to make small text or fine patterns clearly visible in a still picture. When “AUTO” is set “FIELD” or “FRAME” is selected automatically.

TV MODE (See page 59.)
To select whether the video material for a wide-screen will be played back in Pan & Scan style or in Letterbox style.

DISC LANGUAGES (DVD only)

To select and set the language of the audio soundtrack, subtitles, or title/DVD menus for all discs to be played.

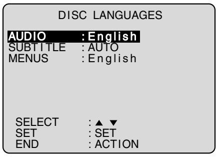
4



```
DVD MAIN MENU
DISC LANGUAGES
AUDIO OUTPUT
STILL MODE     : AUTO
TV MODE        : Letterbox

SELECT   : ▲ ▼
SET      : SET
END      : ACTION
```

1) **Press ▲▼** to select “DISC LANGUAGES.”
2) **Press SET** to display screen.

5



```
DISC LANGUAGES
AUDIO      : English
SUBTITLE   : AUTO
MENUS      : English

SELECT   : ▲ ▼
SET      : SET
END      : ACTION
```

1) **Press ▲▼** to select an item.
2) **Press SET** repeatedly for desired language. (Please refer right.)

6 **Press ACTION** to redisplay DVD menu and go to step 3 to setup another item. Or, **press ACTION** three times to exit.

Once initial settings are done, they remain in memory (even after power off) until changed. This means the unit will always operate under the same conditions (especially DVDs) each time.

Ready Checklist

☐ Unit is in TV-VCR mode, press TV/VCR.

“AUDIO” selections

To select the audio soundtrack language. (factory preset: English)

English/Spanish/French

Original: Original disc language

OTHER ✱✱✱✱: Other language selection*1

“SUBTITLE” selections

To select the subtitle language. (Factory preset: AUTO)

AUTO: Same language selected for “AUDIO”

- If language set for “AUDIO” is used in playback, subtitles will not appear.
- If another language is used during playback, the subtitles will appear in the language selected at “AUDIO” setup.

English/Spanish/French

OTHER ✱✱✱✱: Other language selection*1

“MENUS” selections

(factory preset: English)
To select the language used in title menus or DVD menus.

English/Spanish/French

OTHER ✱✱✱✱: Other language selection*1

To enter OTHER ✱✱✱✱ code number, Press number keys (Please refer to language codes on page 63).
To make corrections, **press ◀** repeatedly to delete language code number, and correct.

*1 If the selected language is not offered, the original disc language is selected.

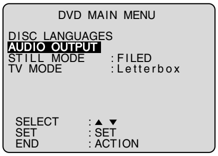
Settings for DVD Operation (continued)

AUDIO OUTPUT

Select the digital output to be output from the optical digital audio output connector of the unit.

1 **Do steps 1 and 2 on page 57.**

2

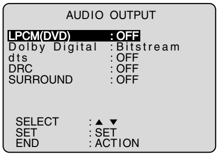


```
DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE        : FILED
TV MODE           : Letterbox

SELECT     : ▲ ▼
SET        : SET
END        : ACTION
```

1) **Press ▲▼*** to select "AUDIO OUTPUT."

2) **Press SET** to display screen.

3



```
AUDIO OUTPUT

LPCM(DVD)         : OFF
Dolby Digital     : Bitstream
dts               : OFF
DRC               : OFF
SURROUND          : OFF

SELECT     : ▲ ▼
SET        : SET
END        : ACTION
```

1) **Press ▲▼** to select an item.

2) **Press SET** repeatedly for output. (See below.)

"LPCM (DVD)" selections

OFF: Linear PCM of less than 48 kHz/16 bit is output. When playing DVDs recorded in linear PCM of over 48 kHz/20 bit or 96 kHz, no digital audio is output. (Factory preset)

PCM: When playing DVDs recorded in linear PCM of 48 kHz/20 bit/24 bit or 96 kHz, digital audio converted to 48 kHz/16 bit is output. (Digital output of PCM audio is restricted to 48 kHz/16 bit or below for copyright protection.)

"Dolby Digital" selections

Bitstream: Dolby Digital bitstream (1ch-5.1ch) is output. (Factory preset)

OFF: No output.

"dts" selections

Bitstream: dts bitstream is output. (Factory preset)

OFF: No output.

"DRC (Dynamic Range Compression)" selections

OFF: Normal audio range is selected. (Factory preset)

ON: For dynamic sound even at low volume, this is useful for late-night listening. [Dolby Digital DVDs only].

"SURROUND" selections

Surround Sound creates the effect of sound coming from non-existent rear speakers even when only connected to a 2-channel stereo system.

OFF: No Surround Sound effect. (Factory preset)

ON: Surround Sound effect.

4 **Press ACTION** to redisplay DVD menu and go to step 2 to setup another item. Or, **press ACTION** three times to exit.

Type of amplifier to be connected	**Recommended setting**		
	LPCM (DVD)	Dolby Digital	dts
No amplifier is connected	OFF	OFF	OFF
AV amplifier (with digital audio input connector) without Dolby Digital/dts decoder	PCM*1	OFF*2	OFF*2
AV amplifier including Dolby Digital decoder	PCM*1	Bitstream	OFF
AV amplifier including Dolby Digital/dts decoder	PCM*1	Bitstream	Bitstream*3

- Make settings according to amplifier connected to optical audio output as shown in above table.
- When a dts decoder is not connected, to enjoy dts DVD, please select audio output other than dts at the dts DVD menu screen. Otherwise, there will be no sound from the unit speakers.

*1 Audio output from unit is converted to 48 kHz/16 bit in addition to audio from digital audio output.
To enjoy high quality sound at 48 kHz/20 bit / 24 bit or 96 kHz, connect the amplifier or decoder directly to the audio output connectors, not to the digital audio output connector. [Select "OFF" at the "LPCM (DVD)".]

*2 When connecting an amplifier (with an optical digital input connector) which does not contain the Dolby Digital or dts decoder, be sure to select "OFF".
If "Bitstream" is selected, starting DVD play may cause such a high level of noise as to be harmful to your ears and damage the speakers.

*3 When a dts decoder is connected, please select "Bitstream" in "dts". If "OFF" is selected, there will be no sound.

Notes

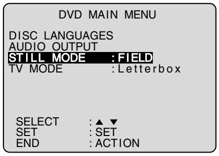
- Turn off other surround effects when using this surround effect.
- For optimum effect, the distance between the unit and the listener should be about 3 or 4 times the distance between the right and left front speakers.

STILL MODE

Set to reduce jitter in a displayed still picture or a motion picture.

1 **Do steps 1 and 2 on page 57.**

2



DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FIELD
TV MODE : Letterbox

SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "STILL MODE."

2) **Press SET** repeatedly for mode. (See below)

AUTO: "FIELD" (Field still) or "FRAME" (Frame still) is automatically selected during the still mode. (Factory preset)

FIELD: "FIELD" (Field still) is always selected. This setting will reduce jitter when compared with "AUTO" on some discs.

FRAME: "FRAME" (Frame still) is always selected. Some texts and fine patterns will be seen clearly when compared with "AUTO" on some discs.

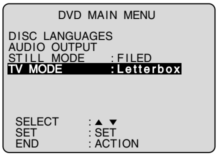
3 **Press ACTION** twice to exit this mode.

Selecting TV MODE

Set the screen display style for wide-screen video material playback.

a **Do steps 1 and 2 on page 57.**

b



DVD MAIN MENU

DISC LANGUAGES
AUDIO OUTPUT
STILL MODE : FILED
TV MODE : Letterbox

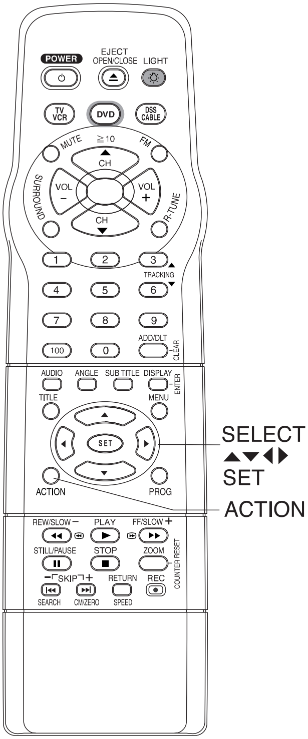
SELECT : ▲ ▼
SET : SET
END : ACTION

1) **Press ▲▼** to select "TV MODE."

2) **Press SET** repeatedly for mode. (See below.)

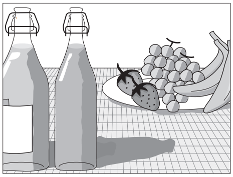
Pan & Scan : (Factory preset)	Wide screen video data is played in Pan & Scan style (left and right of screen is trimmed.) • Video data not formatted in Pan & Scan will play in letterbox style.
Letterbox :	Wide screen video data is played in Letterbox style (top and bottom of screen has black margin).

c **Press ACTION** twice to exit this mode.

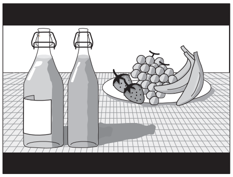

POWER
EJECT OPEN/CLOSE
LIGHT
TV VCR
DVD
DSS CABLE
MUTE
≧10
FM
CH
VOL –
VOL +
SURROUND
R-TUNE
CH
1
2
3
TRACKING
4
5
6
7
8
9
ADD/DLT
100
0
CLEAR
AUDIO
ANGLE
SUB TITLE
DISPLAY
ENTER
TITLE
MENU
SET
ACTION
PROG
REW/SLOW –
PLAY
FF/SLOW +
STILL/PAUSE
STOP
ZOOM
– SKIP +
RETURN
REC
COUNTER RESET
SEARCH
CM/ZERO
SPEED
SELECT ▲▼◀▶
SET
ACTION

Example

- Pan & Scan (Factory preset)



- Letterbox



Before Requesting Service

Check the following points once again if you are having trouble with your unit.

Power	Correction
No power…	• Completely insert Power Plug into an AC outlet. • Set POWER button to ON.
Power turns itself off...	• Auto power-off (shutoff) occurs after about 5 min. in DVD mode with no operation, or if there is no broadcast signal in TV or Playback mode. Turn the power back on. (P. 21, 37)

Monitor	Correction
No picture or sound...	• Make sure your antenna system (TV or CABLE), is correctly set. (P. 11) • Completely insert Power Plug into an AC outlet. • Set POWER button to ON.
Poor picture with normal sound...	• Adjust BRIGHTNESS, SHARPNESS, and PICTURE controls in the SET UP Video Adjustment. (P. 47)
Poor sound with normal picture...	• Adjust VOLUME control. (P. 22)
Poor TV reception...	• Adjust SHARPNESS and PICTURE controls in the SET UP Video Adjustment. (P. 47)
No color or poor color...	• Adjust TINT and COLOR controls in the SET UP Video Adjustment. (P. 47)
Ghost (multiple) images...	• Install a directional antenna.
TV programs cannot be watched...	• Make sure the selected channel is in unit's memory. (P. 16)
Channel cannot be selected...	• Only the channel begin recorded can be viewed on this unit.

VCR	Correction
TV program cannot be recorded...	• Make sure your antenna system (TV or CABLE), is correctly set. (P. 11) • Make sure cassette record tab is intact. (P. 4)
Timer recording cannot be performed…	• Check that clock is set to current time and date. • Make sure DSS/CABLE box (if used) is left on and tuned to channel to be recorded. • Set recording Start/Stop times correctly. (P. 30, 31) • Timer recording may not be performed or continued if a power interruption of more than 1 minute occurs before or during a Timer Recording, even after power is restored.
No playback picture, or the playback picture is noisy or contains streaks...	• Adjust TRACKING control in either direction. (P. 6) • Try Head Cleaning. (P. 6)
VCR cannot be controlled...	• Make sure VCR LOCK is set to off. (P. 39)

Remote Control	Correction
Unit cannot be controlled...	• Aim Remote directly at the remote sensor on the unit. (P. 10) • Avoid any object blocking signal path. • Inspect the remote batteries. (P. 4) • Make sure VCR LOCK is set to off. (P. 39) • Exposing unit remote sensor to direct fluorescent or outdoor light may cause signal interference.
ACTION, PLAY, SELECT, SET POWER, etc. buttons cannot be selected...	• Press TV VCR for TV-VCR mode. (P. 32) • Press DVD for DVD mode. (P. 32) • Press FM for FM mode. (P. 32) • Check remote batteries.

DVD/Video CD/CD	Correction
Play fails to start even when PLAY is pressed...	• This unit cannot play discs other than DVDs, Video CDs and CDs. • The disc may be dirty and require cleaning.
Play starts but then stops immediately...	• Be sure disc is installed with label side up.
Picture is distorted during rapid advance or rapid reverse...	• The picture will be somewhat distorted at times: this is normal.
No Forward/Reverse search play...	• Some discs may have sections which prohibit Forward/Reverse search. (P. 21)
Play does not start even when title is selected...	• Confirm the “DVD LOCK” setting. (P. 56)
Audio soundtrack and/or subtitle language is not the one selected at the initial settings...	• If the audio soundtrack and/or subtitle language selected at DVD initial settings does not exist on the disc, it will not be accessible.
No subtitles...	• Subtitles appear only when available on disc. • Select “ON” at the “Subtitle Language” section (P. 48) to display subtitles.
Alternative audio soundtrack (or subtitle) language cannot be selected...	• Alternative language cannot be selected with discs which do not contain more than one language. • For some discs, alternative language cannot be selected with the AUDIO or SUB TITLE button. Try selecting it from the DVD menu if available.
Angle cannot be changed...	• This function is dependent on software availability. Even if disc has multiple angles, they may be recorded for specific scenes only (ANGLE Indicator on unit lights up). (P. 49)

Miscellaneous	Correction
Video cassette cannot be inserted...	• Insert the cassette window side up; record tab facing you.
Video cassette cannot be removed...	• Completely insert Power Plug into an AC outlet.
Eject does not function or insertion cannot be done...	• Turn the POWER off and then on, and try ejecting or inserting the tape again.
Video cassette ejects when a recording is started, or the power is turned off for timer recording...	• Make sure cassette record tab is intact. (P. 4)
The disc cannot be removed...	• First, unplug unit. Then, prepare a rigid wire (e.g. an extended paper clip, etc.) and, applying moderate force, insert it straight into the hole at the base of the tray. The tray will eject a little. Now, pull the tray all the way out and remove the disc. (P. 9)
In Stop mode, the VCR motor (CYLINDER) continues to rotate...	• To enable Quick Play mechanism, the VCR cylinder will rotate for about 3 minutes. This reduces response time from Stop to Play mode and from Play to Rewind Search mode.

If you cannot resolve the problem, please call the Customer Call Center for product assistance at 1-800-211-PANA (7262.)
To locate an authorized servicenter, please call toll free 1-800-211-PANA (7262.) or send e-mail to : consumerproducts@panasonic.com

Warning and Instruction Displays

These displays will alert you of a missed operation or provide further instructions.

OSD	Caution	Page
PLEASE SET CLOCK BEFORE PROGRAMMING	• If you attempt to set or review a Timer Recording or set the On-Timer and the Clock is not set...	16, 17
CHECK CASSETTE RECORD TAB	• If you press REC, and a cassette is inserted with no record tab...	4, 18
TO CANCEL TIMER REC HOLD DOWN STOP KEY FOR APPROX 3 SEC	• If you press STOP during a Timer Recording...	31
NO CASSETTE PLEASE INSERT A CASSETTE	• If you press PLAY, FF, REW, or REC without a cassette inserted...	18
PLEASE PREPARE FOR TIMER REC	• If the unit is not in Stop mode or a cassette with record tab is not inserted two minutes before a Timer Recording is about to begin...	30, 31
VIDEO HEADS MAY NEED CLEANING PLEASE INSERT HEAD CLEANING CASSETTE OR REFER TO MANUAL END: PLAY	• If head cleaning becomes necessary while playing back a tape...	6
VCR LOCK ACTIVATED	• If you press a function button other than STOP/EJECT or POWER while the unit is in VCR Lock mode...	39
PLEASE CHECK THE DISC, AND FOR STAINS OR SCRATCHES ON DISC	• If you press PLAY, or the unit reads data from a stained or scratched disc in DVD mode. Also, if the type of disc is other than DVD, Video CD or CD...	7
IT IS PROHIBITED TO COPY DVD/ VIDEO CD/CD TO VHS	• If you press REC in DVD mode...	18, 19

Language Code List

Enter the appropriate code number for the initial settings “AUDIO”, “SUBTITLE” and/or “MENUS” (see page 57).

Code	Language
6565	Afar
6566	Abkhazian
6570	Afrikaans
6577	Ameharic
6582	Arabic
6583	Assamese
6588	Aymara
6590	Azerbaijani
6665	Bashkir
6669	Byelorussian
6671	Bulgarian
6672	Bihari
6678	Bengali; Bangla
6679	Tibetan
6682	Breton
6765	Catalan
6779	Corsican
6783	Czech
6789	Welsh
6865	Danish
6869	German
6890	Bhutani
6976	Greek
6978	English
6979	Esperanto
6983	Spanish
6984	Estonian
6985	Basque
7065	Persian
7073	Finnish
7074	Fiji

Code	Language
7079	Faroese
7082	French
7089	Frisian
7165	Irish
7168	Scots Gaelic
7176	Galician
7178	Guarani
7185	Gujarati
7265	Hausa
7273	Hindi
7282	Croatian
7285	Hungarian
7289	Armenian
7365	Interlingua
7378	Indonesian
7383	Icelandic
7384	Italian
7387	Hebrew
7465	Japanese
7473	Yiddish
7487	Javanese
7565	Georgian
7575	Kazakh
7576	Greenlandic
7577	Cambodian
7578	Kannada
7579	Korean
7583	Kashmiri
7585	Kurdish
7589	Kirghiz
7665	Latin

Code	Language
7678	Lingala
7679	Laothian
7684	Lithuanian
7686	Latvian, Lettish
7771	Malagasy
7773	Maori
7775	Macedonian
7776	Malayalam
7778	Mongolian
7779	Moldavian
7782	Marathi
7783	Malay
7784	Maltese
7789	Burmese
7865	Nauru
7869	Nepali
7876	Dutch
7879	Norwegian
7982	Oriya
8065	Panjabi
8076	Polish
8083	Pashto, Pushto
8084	Portuguese
8185	Quechua
8277	Rhaeto-Romance
8279	Romanian
8285	Russian
8365	Sanskrit
8368	Sindhi
8372	Serbo-Croatian
8373	Singhalese

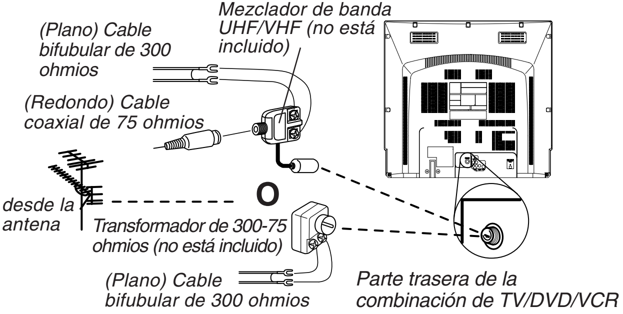
Code	Language
8375	Slovak
8376	Slovenian
8377	Samoan
8378	Shona
8379	Somali
8381	Albanian
8382	Serbian
8385	Sundanese
8386	Swedish
8387	Swahili
8465	Tamil
8469	Telugu
8471	Tajik
8472	Thai
8473	Tigrinya
8475	Turkmen
8476	Tagalog
8479	Tonga
8482	Turkish
8484	Tatar
8487	Twi
8575	Ukrainian
8582	Urdu
8590	Uzbek
8673	Vietnamese
8679	Volapük
8779	Wolof
8872	Xhosa
8979	Yoruba
9072	Chinese
9085	Zulu

Spanish Quick Use Guide/Guía para rápida consulta

Conexión de la antena externa

Desenganche la antena del televisor o de la videograbadora que tuviera anteriormente y conéctela a la parte trasera del registrador Combinación de TV/DVD/VDR, como se muestra en el diagrama. Si el sistema de su antena tiene conductores UHF y VHF separados, usted necesita un mezclador de banda UHF/VHF (no viene con el equipo.)

ADVERTENCIA:
Al utilizar cables coaxiales RF del “Tipo tuerca”, solo debe apretarse con los dedos. Si se aprieta demasiado los cables pueden resultar dañados.

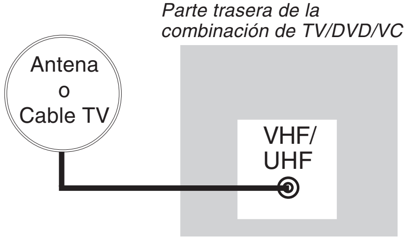

Mezclador de banda UHF/VHF (no está incluido)
(Plano) Cable bifubular de 300 ohmios
(Redondo) Cable coaxial de 75 ohmios
desde la antena
O
Transformador de 300-75 ohmios (no está incluido)
(Plano) Cable bifubular de 300 ohmios
Parte trasera de la combinación de TV/DVD/VCR

Conexiones de TV cable

■ Sin un decodificador de TV cable

Podrá;
- grabar o ver canales sin codificar.

No Podrá;
- grabar o ver canales codificados.
- ver otro canal que no sea el seleccionado para cualquier tipo de grabación.


Parte trasera de la combinación de TV/DVD/VCR
Antena o Cable TV
VHF/ UHF

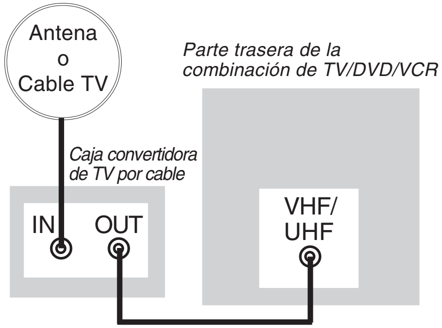
■ Con un decodificador de TV cable

Podrá;
- grabar o ver cualquier canal incluso los canales codificados.

NOTA : El canal deberá ser seleccionado en el decodificador de TV cable.

No Podrá;
- ver otro canal que no sea el seleccionado para cualquier tipo de grabación.
- hacer una grabación con temporizador de un canal a menos que lo seleccione en el decodificador de TV cable.

Para ver y grabar un canal codificado/ no codificado
Sintonice el canal del Registrador de la combinación de VCR/TV en el canal de salida de la caja convertidora de televisión por cable (por ejemple el canal 3.) Después, seleccione en el decodificador de TV cable el canal que se quiera ver o grabar.


Antena o Cable TV
Parte trasera de la combinación de TV/DVD/VCR
Caja convertidora de TV por cable
IN
OUT
VHF/ UHF

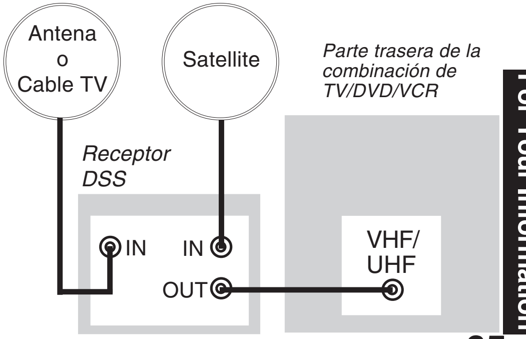
■ Con un receptor DSS

Podrá;
- grabar o ver cualquier canal incluso los canales codificados.

NOTA : El canal deberá ser seleccionado en el receptor DSS.

No Podrá;
- ver otro canal que no sea el seleccionado para cualquier tipo de grabación.
- hacer una grabación con temporizador de un canal a menos que lo seleccione en el receptor DSS.

NOTA : El receptor DSS debe estar apagado para ver programas desde un decodificador de TV cable o desde la antena. Consulte el manual del receptor DSS para más detalles.


Antena o Cable TV
Satellite
Parte trasera de la combinación de TV/DVD/VCR
Receptor DSS
IN
IN
OUT
VHF/ UHF

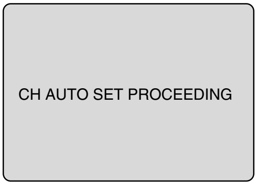
Spanish Quick Use Guide/Gú a para á pida consulta

Realizando Configuracion Inicial

Presione TV/VCR para modo del TV-VCR

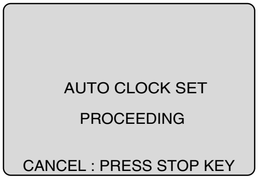
1 **Tape el cable electrico de la unidad en el enchufe de pared de la CA.**

2 **POWER de la prensa en el telecontrol o la unidad. La unidad se adelanta y comienzo auto del canal y del reloj.**



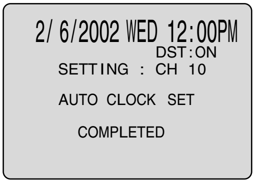
CH AUTO SET PROCEEDING

- Si usa convertidor de cable, enciendala y seleccione el Servicio Publico de Canales de Television (PBS) en su horario de uso o tiempo de su zona. Si utiliza receptor DSS este debe de estar apagado.



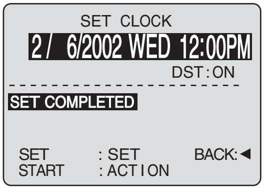
AUTO CLOCK SET
PROCEEDING
CANCEL : PRESS STOP KEY

3 **Selecciones se realizaran automaticamente cuando la configuracion termine, la pantalla siguiente aparecera.**



2/ 6/2002 WED 12:00PM
DST:ON
SETTING : CH 10
AUTO CLOCK SET
COMPLETED

Si “AUTO CLOCK SET IS INCOMPLETE” aparece en pantalla, coloque el tiempo usando el procedimiento manual (MANUAL CLOCK SET), vealo enseguida.



SET CLOCK
2/ 6/2002 WED 12:00PM
DST:ON
SET COMPLETED
SET : SET BACK:◀
START : ACTION

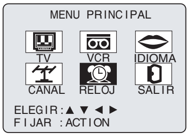
Ajuste Manual del Reloj

Si el ajuste automático del reloj no se ha completado, ajuste el reloj manualmente de la siguiente manera:

1) Presione la tecla ACTION en el control remoto para visualizar la pantalla del menú RELOJ.
2) Presione ▲▼ para seleccionar el mes y SET para ajustar. De la misma forma, seleccione y ajuste la fecha, año, hora y DST (Hora de Verano).
3) Presione dos veces la tecla ACTION para poner el RELOJ en marcha y salir.

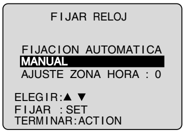
Ajustar de nuevo el reloj

1 Presione ACTION para exhiba el menú.

2 

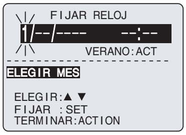
MENU PRINCIPAL
TV VCR IDIOMA
CANAL RELOJ SALIR
ELEGIR:▲ ▼ ◀ ▶
FIJAR :ACTION

Presione ▲▼◀▶ para seleccionar “RELOJ”. Presione SET.

3 

FIJAR RELOJ
FIJACION AUTOMATICA
MANUAL
AJUSTE ZONA HORA : 0
ELEGIR:▲ ▼
FIJAR :SET
TERMINAR:ACTION

Presione ▲▼ para seleccionar “MANUAL” y luego presione SET.

4 

FIJAR RELOJ
1/--/---- --:--
VERANO:ACT
ELEGIR MES
ELEGIR:▲ ▼
FIJAR :SET
TERMINAR:ACTION

Presione ▲▼ y SET para seleccionar y ajustar la hora y la fecha.

5 Presione ACTION dos veces para que el reloj comience a funcionar y salir desde este modo.

Operaciones básicas para la reproducción

1 **Inserte un cassette.**
- El videograbador combinado se enciende automáticamente.

2 **Presione PLAY.**
- La reproducción comienza automáticamente si el cassette no tiene la lengüeta para prevención de grabación.

- ■ Para encontrar una escena en particular
  Búsqueda hacia adelante ➔ Presione FF/SLOW+
  Búsqueda hacia atrás ➔ Presione REW/SLOW-
- ■ Para ver una imagen fija (congelada) ➔ Presione STILL/PAUSE
- ■ Para ver en cámara lenta ➔ Presione FF/SLOW+ o REW/SLOW- en el modo de imagen fija
- ■ Para ver imágenes cuadro a cuadro ➔ Presione STILL/PAUSE en el modo de imagen fija
- ■ Para parar ➔ Presione STOP
- ■ Para rebobinar la cinta ➔ Presione REW/SLOW-
- ■ Para hacer avanzar la cinta rápidamente ➔ Presione FF/SLOW+
- ■ Para expulsar el cassette ➔ Presione EJECT en el control remoto o STOP/EJECT en el videograbador combinado

Operaciones básicas para la grabación

1 **Inserte un el cassette con la lengüeta para prevención de grabado.**
- El videograbador combinado se enciende automáticamente.

2 **Seleccione el canal.**
Presione CH ▲▼ o las teclas numéricas correspondiente.

3 **Seleccione la velocidad de grabación.**
Presione SPEED.
SP = reproducción normal
LP = reproducción larga
SLP = reproducción super larga
- La velocidad seleccionada debe aparecer en la pantalla.

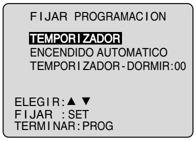
4 **Comience la grabación.**
Presione REC.
- Para editar partes no deseadas de una grabación, presione STILL/PAUSE para hacer una pausa durante la grabación.
- No podrá ver otro canal durante la grabación.

- ■ Para parar ➔ Presione STOP.
- ■ **El videograbador combinado deja de grabar a una hora prefijada.**
  (Grabación de un toque)
  Presione REC repetidamente para ajustar la hora de grabación (30 min - 4 horas.)

Grabación con temporizador

1 **Exhiba FIJAR PROGRAMACION.**
Presione PROG.

2

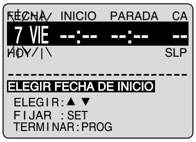


```
   FIJAR PROGRAMACION

   TEMPORIZADOR
   ENCENDIDO AUTOMATICO
   TEMPORIZADOR-DORMIR:00


ELEGIR:▲ ▼
FIJAR  :SET
TERMINAR:PROG
```

Exhiba TEMPORIZADOR.
1) Presione ▲▼ para seleccionar.
2) Presione SET para exhibir.

- Si ya existe un programa en la memoria, presione ▲▼ y SET para seleccionar un número de programa sin usar.

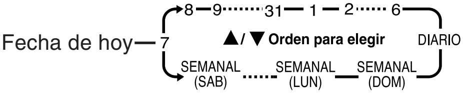
3



```
FECHA/  INICIO   PARADA   CA
 7 VIE  --:--   --:--     --
HOY/|\                   SLP

---------------------------
ELEGIR FECHA DE INICIO
 ELEGIR:▲ ▼
 FIJAR  :SET
 TERMINAR:PROG
```

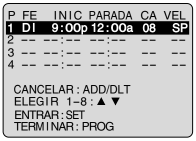
Ajuste la fecha de grabación.
1) Presione ▲▼ para seleccionar.
2) Presione SET o ◀ ▶ para ajustar.

- 1 - 31 = Grabación única
- DIARIO = a la misma hora de lunes a viernes
- SEMANAL = a la misma hora una vez a la semana



Repita el paso 3 para ajustar:
hora de comienzo, hora de parada, canal (o LINEA para una fuente exterior), velocidad (SP, LP, SLP).

4



```
P FE    INIC  PARADA   CA  VEL
1 DI   9:00p 12:00a   08   SP
2 --  --:--  --:--    --   --
3 --  --:--  --:--    --   --
4 --  --:--  --:--    --   --

 CANCELAR : ADD/DLT
 ELEGIR  1–8 : ▲ ▼
 ENTRAR : SET
 TERMINAR : PROG
```

Termine el programa.
Presione PROG
Para introducir más programas.
presione ▲▼ y SET para seleccionar y ajustar el número de programa en blanco, y luego repita los pasos 3.

5 **Salga de este modo.**
Presione PROG dos veces
- Si está usando un decodificador de TV cable, asegúrese que se encuentra en el canal deseado y que la alimentación queda conectada para grabar con temporizador.
- El indicador PROG TIMER se enciende en el videograbador combinado.

Spanish Quick Use Guide/Guía para rápida consulta

Operaciones básicas del DVD

1 **Presione POWER en el control remoto o el aparato.**

2 **Elija el modo DVD**
Presione DVD.

3 **Introducir un disco.**
1) Presione OPEN/CLOSE.
2) Ponga un disco en la bandeja de disco.
- Sujete el disco sin tocar ninguna de sus superficies, póngalo con el lado donde esté impreso el título hacia arriba, alinéelo con las guías y póngalo en su posición apropiada. Disco de 3”(8 cm) Disco de 5” (12 cm)

4 **Iniciar la reproducción**
Presione PLAY.
La bandeja del disco se cierra automáticamente.
- Si está usando un DVD interactivo (Interactive DVD) o un Vídeo CD con contol de reproducción (playback control) y aparece un menú de títulos (TITLE MENU) en la pantalla, siga al paso 5.

5 **Elija el artículo deseado.**
1) Presione ▲▼◀ ▶ o las teclas numéricas.
2) Presione SET para la reproducción.
Si usa las teclas numéricas, la reproducción comienza automáticamente.

6 **Parar la reproducción.**
Presione STOP.

7 **Expulsar el disco.**
Presione OPEN/CLOSE.

■ **Para buscar una escena particular**
Búsqueda hacia adelante
Presione FF/SLOW+ en el modo de reproducción.
Búsqueda hacia atrás
Presione REW/SLOW- en el modo de reproducción.
(Para liberar, presione PLAY)

■ **Para saltar un capítulo o una pista**
Salto hacia adelante
Presione SKIP ▶▶I en el modo de reproducción.
Un capítulo (DVD) o una pista (Vídeo CD/CD) se salta cada ves que se oprime la tecla.
Salto hacia atrás
Presione I◀◀ SKIP en el modo de reproducción.

■ **Para ver una imagen fija**
Presione STILL/PAUSE durante la reproducción.
(Para liberar, presione PLAY)

■ **Para ver imágenes cuadro a cuadro (DVD/Vídeo CD)**
Presione STILL/PAUSE en el modo de imagen fija.
La imagen avanza un cuadro cada vez que presiona la tecla.
(Para volver a la reproducción normal, presione PLAY.)

■ **Para ver en cámara lenta (DVD/Vídeo CD)**
Presione FF/SLOW+ o REW/SLOW- en el modo de imagen fija.
(Para liberar, presione PLAY)

Funcionnamiento del DVD utilizando visualizaciones en pantalla

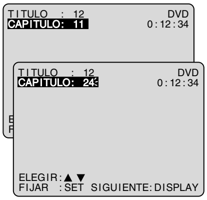
Cuando se presiona DISPLAY, la visualización en pantalla muestra la información del disco (título / capítulo / número de lista, tiempo transcurrido de reproducción, audio / idioma del subtítulo, y ángulo) e información (repetir la reproducción, modo reproducción, Karaoke vocal encendido / apagado, etc.).

1 **Visualizar Visualizaciones en pantalla.**
Presione DISPLAY en el modo reproducción o parada.
- Cada vez que se presione DISPLAY, la visualización en pantalla cambia como se muestra a continuación.

→ Información seleccionada del disco
↓
Información seleccionada de la unidad
↓
Pantalla normal

2 **Selección del ítem deseado**
1)Presione ▲▼ (o ◀ ▶) para seleccionar.
2)Presione SET para ajustar

3 <Ejemplo de DVD>

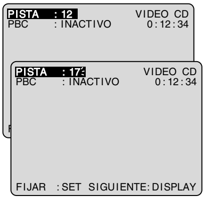


TITULO : 12 DVD
CAPITULO: 11 0:12:34

TITULO : 12 DVD
CAPITULO: 24 0:12:34
ELEGIR:▲▼
FIJAR :SET SIGUIENTE:DISPLAY

Selección del ajuste deseado
1)Presione ▲▼ para seleccionar.
2)Presione SET para ajustar.

<Ejemplo de Vídeo CD>



PISTA : 12 VIDEO CD
PBC : INACTIVO 0:12:34

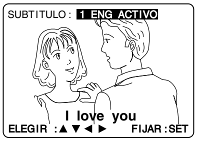
PISTA : 17 VIDEO CD
PBC : INACTIVO 0:12:34
FIJAR :SET SIGUIENTE:DISPLAY

Para volver a la pantalla normal,
Presione repetidamente CLEAR o DISPLAY.

Cambio del idioma de subtítulos [DVD solamente]

El idioma de los subtítulos seleccionado al hacer las fijaciones iniciales se puede cambiar por otro idioma diferente, si éste se encuentra disponible.

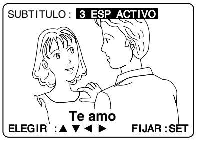
1


SUBTITULO : 1 ENG ACTIVO
I love you
ELEGIR : ▲ ▼ ◀ ▶
FIJAR : SET

Presione SUBTITLE durante la reproducción.

Cuando no haya subtítulos grabados, "-" se visualizará en lugar del número de idioma.

2


SUBTITULO : 3 ESP ACTIVO
Te amo
ELEGIR : ▲ ▼ ◀ ▶
FIJAR : SET

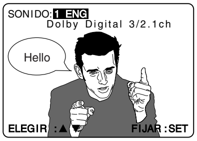
Seleccionar el idioma deseado.

1) Presione ▲▼ para seleccionar idioma.
2) Presione ▶ (o ◀) para ajustar.
3) Presione ▲ (o ▼) para seleccionar "ACTIVO" o "INACTIVO."

Cambio del idioma de la pista de sonido [DVD solamente]

El idioma de la pista de sonido seleccionado al hacer las fijaciones iniciales se puede cambiar por otro idioma diferente, si éste se encuentra disponible.

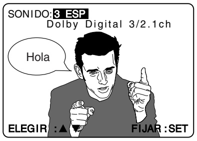
1


SONIDO: 1 ENG
Dolby Digital 3/2.1ch
Hello
ELEGIR : ▲ ▼
FIJAR : SET

Visualizar la pantalla AUDIO.

Presione AUDIO durante la reproducción.

2


SONIDO: 3 ESP
Dolby Digital 3/2.1ch
Hola
ELEGIR : ▲ ▼
FIJAR : SET

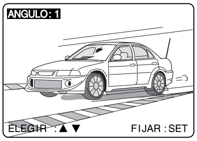
Seleccionar el idioma deseado.

Presione ▲▼ para seleccionar idioma.

Visión desde otro ángulo [DVD solamente]

Algunos discos DVD tienen escenas que han sido filmadas simultáneamente desde un número de ángulos diferentes. Con estos discos, la misma escena podrá verse desde cada uno de estos ángulos diferentes utilizando el botón ANGLE.

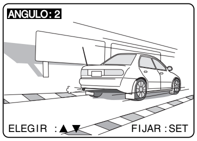
1


ANGULO : 1
ELEGIR : ▲ ▼
FIJAR : SET

Visualizar la pantalla de ángulo.

Presione ANGLE durante la reproducción.

2


ANGULO : 2
ELEGIR : ▲ ▼
FIJAR : SET

Seleccionar el ángulo deseado.

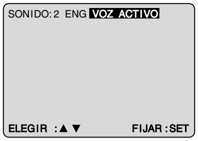
Presione ▲▼ para seleccionar.

Selección de vocal para los discos de Karaoke [DVD/Video CD]

1 **Visualizar la pantalla AUDIO.**

Presione AUDIO durante la reproducción.

2


SONIDO: 2 ENG VOZ ACTIVO
ELEGIR : ▲ ▼
FIJAR : SET

Seleccionar el ajuste deseado.

1) Presione ▲▼ (o ◀ ▶) para seleccionar.
2) Presione ▶ (o ◀) para ajustar. (DVD solamente)

• DVD Karaoke (1 vocal)	VOCAL ON⟷VOCAL OFF
• DVD Karaoke (2 vocales)	VOCAL V1 + V2 ➔ VOCAL V1 ↑ ↓ VOCAL OFF ⟵ VOCAL V2
• Video CD	LR ➔ L ➔ R

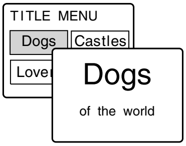
Utilización de un menú de títulos [DVD solamente]

Algunos discos con películas, por ejemplo, vienen con dos o más títulos. Si el disco tiene un menú de títulos grabados, el botón TITLE podrá utilizarse para seleccionar el título de la película.

1 **Presione TITLE durante la reproducción.**

Ahora se visualiza una lista de los títulos del disco.

2


TITLE MENU
Dogs
Castles
Lover
Dogs
of the world

Seleccionar el título deseado.

1) Presione ▲▼ ◀ ▶ o las teclas numéricas seleccionar.
2) Presione SET o PLAY.

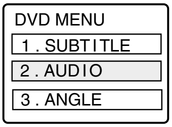
Utilización de un menu de DVD [DVD solamente]

Algunos discos DVD tienen estructuras únicas de menús llamadas menús DVD. Por ejemplo, los DVDs programados con un contenido complejo proporcionan menús guía, y los grabados con varios idiomas proporcionan menús para audio e idiomas de subtítulos. Aunque los contenidos de los menús DVD y la operación cambian de disco a disco, a continuación se explica la operación básica cuando se utiliza esta característica.

1 **Presione MENU durante la reproducción.**

El menú de DVD introducido en el disco se visualiza ahora.

2


DVD MENU
1 . SUBTITLE
2 . AUDIO
3 . ANGLE

Seleccionar el ítem deseado.

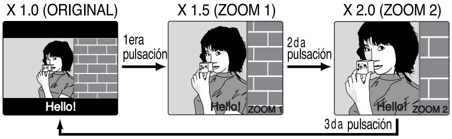
1) Presione ▲▼ ◀ ▶ o las teclas numéricas para seleccionar.
2) Presione SET o PLAY.

Ampliación de la imagen [DVD solamente]

Durante la reproducción de un DVD, puede ampliar partes específicas de una imagen y seleccionar la relación de zoom usando el botón ZOOM del control remoto.

Seleccione el tamaño de la imagen.

Presione ZOOM repetidamente para cambiar el tamaño de la imagen como se indica a continuación:


X 1.0 (ORIGINAL)
X 1.5 (ZOOM 1)
X 2.0 (ZOOM 2)
1era pulsación
2da pulsación
3da pulsación
Hello!
Hello!
ZOOM 1
Hello!
ZOOM 2

- ■ Use los botones ▲ y ▼ para desplazar la posición hacia arriba o hacia abajo.
- ■ Use los botones ◀ y ▶ para desplazar la posición hacia la izquierda o hacia la derecha.

Spanish Quick Use Guide/Guía para rápida consulta

Reproducción programada [Vídeo CD/CD]

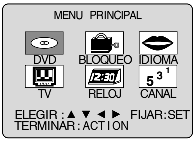
Puede usted programar pistas específicas y el orden de reproducción.

- Vídeo CD o CD es insertado en el modeo DVD.

1 **Visualizar MAIN MENU.**

Presione ACTION en el modo parada.

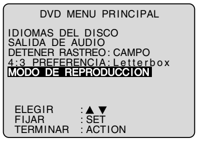
2


MENU PRINCIPAL
DVD
BLOQUEO
IDIOMA
TV
2:30
RELOJ
5 3 1
CANAL
ELEGIR : ▲ ▼ ◄ ► FIJAR:SET
TERMINAR : ACTION

Vísualizar la pantalla DVD.

1) Presione ▲▼◄► para seleccionar “DVD.”
2) Presione SET para visualizar.

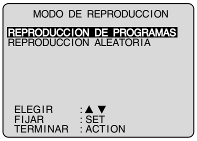
3


DVD MENU PRINCIPAL
IDIOMAS DEL DISCO
SALIDA DE AUDIO
DETENER RASTREO : CAMPO
4:3 PREFERENCIA : Letterbox
MODO DE REPRODUCCION
ELEGIR : ▲ ▼
FIJAR : SET
TERMINAR : ACTION

Seleccionar “MODO DE REPRODUCCION.”

1) Presione ▲▼ para seleccionar.
2) Presione SET para visualizar.

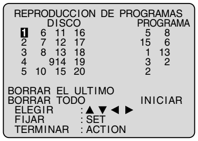
4


MODO DE REPRODUCCION
REPRODUCCION DE PROGRAMAS
REPRODUCCION ALEATORIA
ELEGIR : ▲ ▼
FIJAR : SET
TERMINAR : ACTION

Seleccionar “REPRODUCCION DE PROGRAMAS.”

1) Presione ▲▼ para seleccionar.
2) Presione SET para visualizar.

5

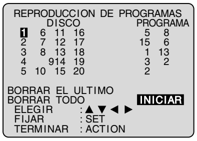

REPRODUCCION DE PROGRAMAS
DISCO
PROGRAMA
1 6 11 16
2 7 12 17
3 8 13 18
4 9 14 19
5 10 15 20
5 8
15 6
1 13
3 2
2
BORRAR EL ULTIMO
BORRAR TODO
INICIAR
ELEGIR : ▲ ▼ ◄ ►
FIJAR : SET
TERMINAR : ACTION

Seleccionar el número de la pista deseada. (Se visualizan los números de la pista del disco).

1) Presione ▲▼◄► para seleccionar.
2) Presione SET para seleccionar.

- Repita el paso 5 para seleccionar otra pista.
- La pista seleccionada se añade a la parte derecha.

6


REPRODUCCION DE PROGRAMAS
DISCO
PROGRAMA
1 6 11 16
2 7 12 17
3 8 13 18
4 9 14 19
5 10 15 20
5 8
15 6
1 13
3 2
2
BORRAR EL ULTIMO
BORRAR TODO
INICIAR
ELEGIR : ▲ ▼ ◄ ►
FIJAR : SET
TERMINAR : ACTION

Comenzar “REPRODUCCION DE PROGRAMAS.”

1) Presione ▲▼◄► para seleccionar “INICIAR.”
2) Presione SET.

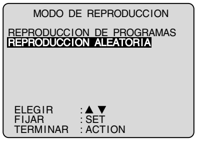
- La reproducción comienza en la secuencia programada.
- Para cancelar, pulsar STOP durante la reproducción y luego presione CLEAR.

Reproducción arbitraria [Vídeo CD/CD]

Las pistas se reproducen de forma arbitraria.

1 **Repita los pasos 1-3 de la página anterior.**

2


MODO DE REPRODUCCION
REPRODUCCION DE PROGRAMAS
REPRODUCCION ALEATORIA
ELEGIR : ▲ ▼
FIJAR : SET
TERMINAR : ACTION

Seleccionar “REPRODUCCION ALEATORIA.”

1) Presione ▲▼ para seleccionar.
2) Presione SET.

- Comienza la reproducción arbitraria.
- Para cancelar, presione STOP durante la reproducción y luego presione CLEAR.

Fijaciones iniciales

1 **Visualizar MAIN MENU.**
Presione ACTION en el modo de parada.

2 **Visualizar la pantalla DVD.**

1) Presione ▲▼◄► para seleccionar.
2) Presione SET.

3 **Seleccionar el artículo deseado.**

1) Presione ▲▼ para seleccionar.
2) Presione SET.

IDIOMAS DEL DISCO

Todos los idiomas ofrecidos en el disco pueden ser ajustados, Si el idioma ajustado no es ofrecido en el disco, se seleccionará el idioma original del disco.

SALIDA DE AUDIO

Puede usted ajustar la salida audio procedente del terminal de salida audio digital.

DETENER RASTREO

Para seleccionar “CAMPO” o “CUADRO” para prevenir inestabilidad o para permitir ver textos pequeños o patrones finos claramente en el modo de imagen fija.

4 : 3 PREFERENCIA

Para seleccionar si el material del vídeo para pantalla ancha será vuelto a reproducir en el estilo Pan&Scan o en el estilo Letterbox en la pantalla.

4 **Seleccionar el artículo deseado.**

1) Presione ▲▼ para seleccionar.
2) Presione SET.

5 **Volver a visualizar el menú de DVD para continuar el ajuste.**

Presione ACTION y pase al paso 3 para ajustar otro ajuste o, para salir, presione ACTION tres veces.

Selección de IDIOMAS DEL DISCO [DVD solamente]

Seleccione “AUDIO” Inglés / Español / Francés :
(Fijación de fábrica : inglés)

Original : Se seleccionará el idioma original de cada disco.

OTRO ** :** Se puede seleccionar el otro idioma.

Seleccione “SUBTITULO”

AUTO : Se seleccionará el mismo que fue seleccionado en la preparación de “AUDIO”. (Fijación de fábrica)

- Si el idioma seleccionado en la preparación de “AUDIO” se utiliza durante la reproducción, los subtítulos no aparecerán.
- Si se utiliza otro idioma durante la reproducción, los subtítulos aparecerán en el idioma seleccionado en la preparación de “AUDIO”

Inglés / Español / Francés

OTRO ** :** Se puede seleccionar el otro idioma.

Seleccione “MENU”

Inglés / Español / Francés : (Fijación de fábrica : inglés)
OTRO ** :** Se puede seleccionar el otro idioma.

Selección de SALIDA DE AUDIO

Seleccione “LPCM(DVD)”

INACTIVO : Por el conector de salida de audio digital solamente sale PCM lineal de 48 kHz/16 bits. Durante la reproducción del DVD grabado en el PCM lineal de 48 kHz/20 bits o 96 kHz, no sale audio digital. (Fijación de fábrica)

PCM : Durante la reproducción del DVD grabado en el PCM lineal de 48 kHz/ 20 bits/24 bits o 96 kHz, sale audio digital convertido a 48 kHz/16 bits. (La salida digital de audio PCM está restringida a 48 kHz/16bits o menos para proteger los derechos de autor.)

Seleccione “Dolby Digital”

Bitstream: Sale un flujo de bits Dolby digital (2ch-5.1ch). (Fijación de fábrica)

INACTIVO : No hay salida de audio.

Seleccione “dts”

Bitstream : Sale un flujo de bits dts. (Fijación de fábrica)

INACTIVO : No hay salida de audio.

Seleccione “DRC (Dynamic Range Compression)”

INACTIVO : Se selecciona el margen de audio normal.
(Fijación de fábrica)

ACTIVO : Seleccione este ajuste para disfrutar de un sonido dinámico incluso a bajo volumen. Esto es muy útil para escuchar durante la noche.
[Esta función sólo se activa con DVDs Dolby Digital.]

Seleccione “SURROUND”

El sonido envolvente crea el efecto de sonido que procede de altavoces que parecen ester en la parte de atrás aún cuando solo se ha conectado a un sistema estéreo de 2 canales.

INACTIVO : No efecto de sonido envolvente.
(Fijación de fábrica)

ACTIVO : Efecto de sonido envolvente.

Selección de DETENER RASTREO

AUTO : Durante el modo de imagen fija se seleccionarán automáticamente “Campo fijo” o “Cuadro fijo” (Fijacion de fabrica)

CAMPO : Seleccione este ajuste cuando ocurra “distorsión” en las imagenes, incluso cuando se haya seleccionado “AUTO”.

CUADRO : “Cuadro fijo” es siempre seleccionado. Seleccionar este ajuste cuando no se puedan ver claramente texto pequeño o patrones finos incluso cuando esté seleccionado “AUTO”.

Selección de 4 : 3 PREFERENCIA

Pan&Scan : Datos de la pantalla ancha de vídeo son reproducidos en el estilo Pan & Scan (la parte derecha e izquierda de la pantalla son recortadas). (Fijación de fábrica)

- Datos de vídeo no formateados en Pan & Scan serán reproducidos en el estilo letterbox.

Letterbox : Datos de la pantalla ancha de vídeo son reproducidos en el estilo Letterbox (la parte de arriba y abajo de la pantalla tienen un margen negro).

Index

TV / VCR

A Accessories 4
AC Power Plug 10
ACTION button 8, 16
ADD / DLT button 8, 17
Audio Adjustment 47
Audio Auto Gain Control (AGC) 46
Audio button 8, 23
Audio connections 12
Audio Features 44, 45
Audio Menu 46
Audio Mode for FM Radio 29
Audio Mode for Playback 44
Audio Mode for Recording 44
Audio Mode for TV Viewing 23
Audio Mute 22
Audio / Video In Jack 10
Audio Output Connector (L/R) 11
Auto Operation Functions 37
B Batteries 4
Before Requesting Service 60, 61
Blocking Message 43
Blue Screen Display 27
Broadcast Types 23
C Cable Box Brand Code Number 33
Cable Box Universal Remote Control Feature 32
Cassette Compartment 10
Caption On Mute 25
Channel 16, 17, 27
Channel Caption 38
CHANNEL UP / DOWN button 8, 22
Clock 16, 17
Closed Caption 24, 25
CM SKIP / ZERO SEARCH button .. 8, 36, 37
Code Numbers, DSS / Cable Box Brand . 32
Commercial Skip 37
Connections 11
Connections, Audio 12
Connections, DSS / Cable Box 11
Connections, Antenna/Cable 11
Copy Your Tapes (Dubbing) 19
COUNTER RESET button 8, 36
Customer Services Directory 75
D DISPLAY / ENTER button 8, 27, 32
DSS Brand Code Number 33
DSS CABLE button 8, 32
DSS / Cable Box Connections 11
DST (Daylight Saving Time) 6
E Eject button 8
Eject tape 18
F Fast Forward 18
FF button 8, 18
FM button 8, 28, 29
FM Radio 28, 29
Forward Search 18
Frame by Frame Advance 18
Front Panel Indicators 9
Function Display 27
H Head Cleaning 6
I Important Safeguards and Precautions 2
Information (Unit, Cassette, Disc) .... 6 - 7
Initial Setup 14
Index Search 34
Indicators on the Front Panel 9
Input Mode 19
L Language 16
LIGHT button 9
Limited Warranty .... BC
Location of Controls 8
M MTS Broadcast / TV Stereo System 23
MUTE button 8, 22
N NUMBER keys 8, 22
O 100 Key 22
One Touch Recording 18
On-Screen Display (OSD) 27
ON-TIMER Indicator 9, 26
ON-TIMER with Alarm 26
P Phones 22
Playback 18
PLAY button 8, 18
POWER button 8, 14
PROG button 8, 26, 30
Program End Search 35
PROG TIMER Indicator 9, 30
Q Quality Picture 6
R Rapid Tune 22
R-TUNE button 8, 22
REC button 8, 18
REC Indicator 9, 18
Rec(ord) 18
Record / Playback Speed Settings 4
Remote Control Buttons 8
Remote Sensor 9
Remote Warning Feature 39
Repeat Play 36
Reset Language, Channels, Clock, Time Zone Adjust 16, 17
Reset unit 15
Reverse Search 18
REW button 8, 18
Rewind 18

TV / VCR

S Safety Precautions 3
SEARCH button 8, 34, 35
Secret Code 40
Selecting Input Mode 19
SELECT / SET button 8, 16
Sleep Timer 26
Slow Motion 18
Spanish Quick Use Guide 65
Special VCR Features 38
Specifications 6
SPEED button 8, 18
Still Picture 18
STILL / PAUSE button 8, 18
STOP button 8, 18
SURROUND button 8, 45
Surround Sound 45

T Table of Contents 5
Tape Erasure Prevention 4
Tape Operation 34
Timer Program Review, Replace, Clear .. 31
Timer Recording 30
Timer Recording Cancellation 31
Time Zone Adjust 17
TRACKING / V-LOCK buttons 6, 8
TV Operation 22
TV Timer Features 26
TV - VCR button 8, 32
TV/VCR Status & Clock Display 27

U Unit, Front/Rear view 10, 11
Universal Remote Control 32
US MOVIES Ratings 41
US TV PROGRAMS Ratings 42

V VCR Lock 39
Video Adjustment 47
Video Menu 46
V-Chip Control Feature 40
VHF / UHF Antenna Input Terminal 11
VOLUME UP / DOWN button 8, 22

W Warning and Instruction Displays 62
Weak Signal Display Feature 39

Z Zero Search 36

DVD

A ANGLE button 8, 49
Angle Indicator 9, 49
Auto-Power Off function 21
AUDIO button 8, 48
AUDIO OUTPUT 58
Audio soundtrack language (DVD) 48

B Basic DVD Operation 20

C CLEAR button 8, 51, 53

D Definition of terms 7
Disc Audio attribute 1 type, sampling frequency, bit No. 48
Disc format 7
Disc handling 7
Disc information screen 54
DISC LANGUAGES (DVD) 57
Disc Operation 10, 48
Disc Tray 7, 20
DISPLAY button 8, 53
DVD button 8, 20
DVD Lock Feature (DVD) 56
DVD Lock Ratings (DVD) 56
DVD menu (DVD) 50
DVD Operation using On-Screen 53

F FF button 8, 20
Forward/ Reverse Chapter/ Track skip 21
Frame by Frame picture (DVD/Video CD) 21

K Karaoke (DVD/Video CD) 49

L Language Code List 8, 63

M MENU button 50
Multiple angle viewing (DVD) 49

O OPEN / CLOSE button 8, 20
Optical digital audio output connector 11

P Picture Zoom (DVD) 49
Play 20
Playback control (Video CDs) 21
PLAY button 8, 20
Program Play (Video CD/CD) 50
Program Repeat Play (Video CD/CD) 51

R Random Play (Video CD/CD) 51
Region number 3
Foward / Reverse rapid scene search 21
Repeat Play 55
RESUME function 21
RETURN button 8, 20
REW button 8, 20

S Settings for DVD Operation 57
SKIP + / - button 8, 20
Slow Motion (DVD/Video CD) 21
SLOW + / - button 8, 21
STILL MODE 59
Still (Pause) Picture 21
STILL / PAUSE button 8, 21
Subtitle language (DVD) 48

T TV MODE 59
Title menu (DVD) 50

U Unit information screen (Unit) 55

Z Zoom button 8, 49

Limited Warranty

PANASONIC CONSUMER ELECTRONICS COMPANY,
DIVISION OF MATSUSHITA ELECTRIC
CORPORATION OF AMERICA
One Panasonic Way Secaucus, New Jersey 07094

PANASONIC SALES COMPANY, DIVISION OF MATSUSHITA
ELECTRIC OF PUERTO RICO, INC.,
AVE. 65 de Infantería, Km. 9.5 San Gabriel Industrial Park,
Carolina, Puerto Rico 00985

Panasonic/Quasar Video Products

Limited Warranty

Limited Warranty Coverage

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as “the warrantor”) will, for the length of the period indicated on the chart below, which starts with the date of original purchase (“warranty period”), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product	Parts	Labor	Service	Contact Number
Camcorder	One (1) Year (except CCD Image Sensor) CCD Image Sensor - 6 (Six) Months	Ninety (90) Days Ninety (90) Days	Carry-In or Mail-In	1-800-211-PANA(7262)
DVD/VCR Deck, A/V Mixer	One (1) Year	Ninety (90) Days	Carry-In or Mail-In	1-800-211-PANA(7262)
TV/VCR, TV/DVD, TV/DVD/VCR Combination	One (1) Year (except CRT) CRT - Two (2) Years	Ninety (90) Days Ninety (90) Days	Carry-In: 21” CRT and Smaller In-Home or Carry-In: 22” CRT and Larger	1-800-211-PANA(7262)
TV/HDR Combination	One (1) Year (except CRT) CRT - Two (2) Years	Ninety (90) Days Ninety (90) Days	In-Home or Carry-In	1-888-843-9788
Rechargeable Batteries (in exchange for defective item)	Ten (10) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)
Tape (in exchange for defective item)	Five (5) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)
Memory Cards (in exchange for defective item)	Ninety (90) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)

During the “Labor” warranty period there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. You must carry-in or mail-in your product or arrange for in-home service, as applicable, during the warranty period.

If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold “as is”. A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In, Mail-in or In-Home Service

For Carry-In, Mail-In or In-Home Service (as applicable) in the United States call toll free contact number listed above or visit Panasonic Web Site: http://www.panasonic.com

For assistance in Puerto Rico call Panasonic Sales Company (787)-750-4300 or fax (787)-768-2910.

In-Home service, if applicable, requires clear, complete and easy access to the product by the authorized servicer and does not include removal or re-installation of an installed product. It is possible that certain in-home repairs will not be completed in-home, but will require that the product, or parts of the product, be removed for shop diagnosis and/or repair and then returned.

Limited Warranty Limits And Exclusions
This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage, nor does it cover markings or retained images on the picture tube resulting from viewing fixed images (including, among other things, letterbox pictures on standard 4:3 screen TV's, or non-expanded standard 4:3 pictures on wide screen TV's, or onscreen data in a stationary and fixed location). The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, or travel to and from the servicer, loss of media or images, data or other memory or recorded content. The items listed are not exclusive, but are for illustration only.)
ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE (INCLUDING COST OF AN IN-HOME SERVICE CALL, WHERE APPLICABLE) WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:
1-800-211-PANA (7262), Monday-Friday 9 am-9 pm; Saturday-Sunday 9 am-7 pm, EST.
or send e-mail : consumerproducts@panasonic.com

Web Site: http://www.panasonic.com
You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

Accessory Purchases:

1-800-332-5368 (Customer Orders Only)
Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032
(Monday-Friday 6 am-5 pm; Saturday 6 am-10:30 am, PST)
(Visa, MasterCard, Discover Card, American Express, Check)

Service in Puerto Rico

Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/ Factory Servicenter:
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787)750-4300 Fax (787)768-2910

As of February 2002

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation of America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Sales Company (“PSC”),
Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

P

Printed in U.S.A
LSQT0521A
M0202-0

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ⦶ :Test point with a jumper wire across a hole in P.C.B.
   ▭→ :Test point with a component lead on the foil side.
   ▨ :Test point with no test pin.
   ● :Test point with a test pin.

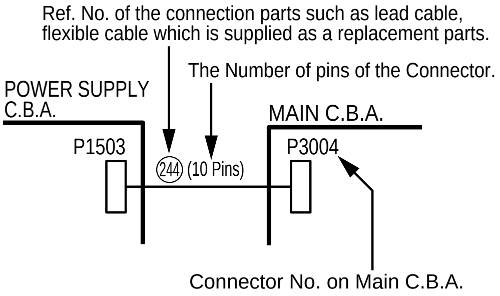
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V)......Zener Voltage

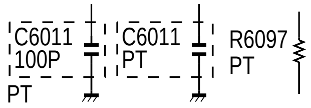
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
POWER SUPPLY C.B.A.
MAIN C.B.A.
P1503
244 (10 Pins)
P3004
Connector No. on Main C.B.A.

3. Parts marked "PT" are not used in any models included in this service model.

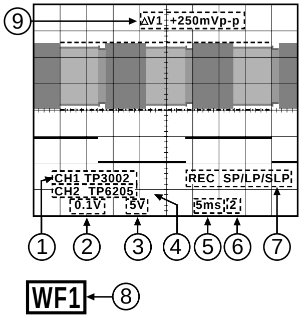
   Example:


C6011
100P
PT
C6011
PT
R6097
PT

4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform


⑨
ΔV1 +250mVp-p
CH1 TP3002
CH2 TP6205
0.1V
5V
REC SP/LP/SLP
5ms
2
①
②
③
④
⑤
⑥
⑦
WF1
⑧

① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement

a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

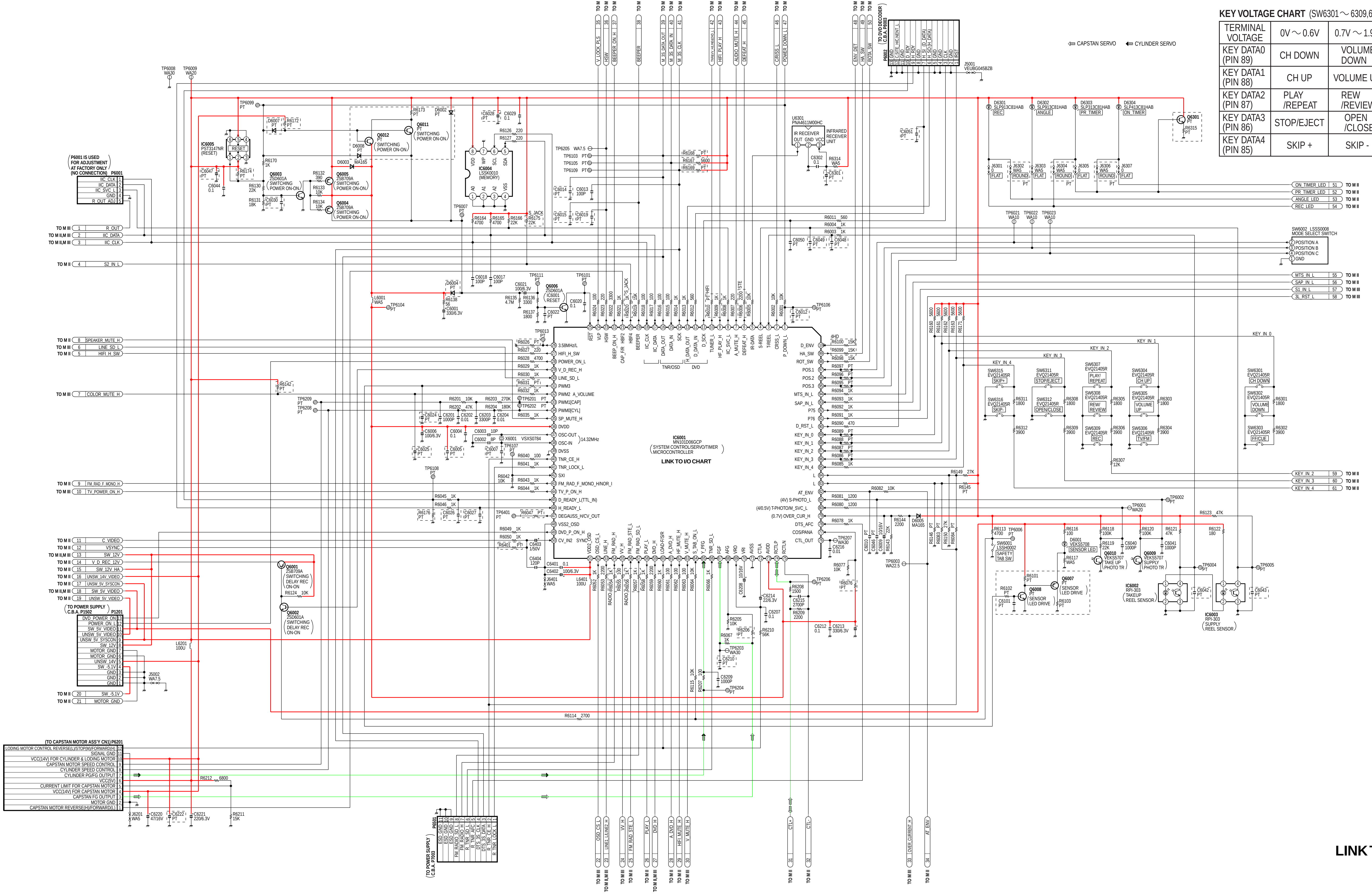
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

KEY VOLTAGE CHART (SW6301～6309,6311,6312,6315,6316,6383 ～ 6386)

TERMINAL VOLTAGE	0V～0.6V	0.7V～1.9V	2.0V～3.1V	3.2V～4.4V
KEY DATA0 (PIN 89)	CH DOWN	VOLUME DOWN	FF/CUE	-----
KEY DATA1 (PIN 88)	CH UP	VOLUME UP	TV/FM	-----
KEY DATA2 (PIN 87)	PLAY /REPEAT	REW /REVIEW	REC	DVD PLAY
KEY DATA3 (PIN 86)	STOP/EJECT	OPEN /CLOSE	POWER	DVD STOP
KEY DATA4 (PIN 85)	SKIP +	SKIP -	DVD PAUSE/STILL	-----


IC6001
MN101D06GCP
(SYSTEM CONTROL/SERVO/TIMER MICROCONTROLLER)
LINK TO I/O CHART
IC6004
LSSK0010
(MEMORY)
IC6005
PST3147NR
(RESET)
IC6002
RPI-303
TAKEUP REEL SENSOR
IC6003
RPI-303
SUPPLY REEL SENSOR
U6301
PNA4611M00HC
IR RECEIVER
INFRARED RECEIVER UNIT
Q6001 2SB709A SWITCHING DELAY REC ON-ON
Q6002 2SD601A SWITCHING DELAY REC ON-ON
Q6003 2SD601A SWITCHING POWER ON-ON
Q6004 2SB709A SWITCHING POWER ON-ON
Q6005 2SB709A SWITCHING POWER ON-ON
Q6006 2SD601A RESET
Q6007 SENSOR LED DRIVE
Q6008 SENSOR LED DRIVE
Q6009 VEKS5707 SUPPLY PHOTO TR
Q6010 VEKS5707 TAKE UP PHOTO TR
Q6011 SWITCHING POWER ON-ON
Q6012 SWITCHING POWER ON-ON
Q6301
D6001 VEKS5708 SENSOR LED
SW6001 LSSH0002 SAFETY TAB SW
SW6002 LSSS0008 MODE SELECT SWITCH
POSITION A
POSITION B
POSITION C
GND
D6301 SLP913C81HAB REC
D6302 SLP913C81HAB ANGLE
D6303 SLP313C81HAB PR_TIMER
D6304 SLP413C81HAB ON_TIMER
SW6301 EVQ21405R CH DOWN
SW6302 EVQ21405R VOLUME DOWN
SW6303 EVQ21405R FF/CUE
SW6304 EVQ21405R CH UP
SW6305 EVQ21405R VOLUME UP
SW6306 EVQ21405R TV/FM
SW6307 EVQ21405R PLAY/ REPEAT
SW6308 EVQ21405R REW/ REVIEW
SW6309 EVQ21405R REC
SW6311 EVQ21405R STOP/EJECT
SW6312 EVQ21405R OPEN/CLOSE
SW6315 EVQ21405R SKIP+
SW6316 EVQ21405R SKIP-
X6001 VSX50784 14.32MHz
P6001 IS USED FOR ADJUSTMENT AT FACTORY ONLY (NO CONNECTION) P6001
(TO POWER SUPPLY C.B.A. P1502) P1201
(TO CAPSTAN MOTOR ASS'Y CN1) P6201
(TO POWER SUPPLY C.B.A. P7003) P6601
(TO DVD DECODER C.B.A. P6003) P6002
J5001 VEUBG045BZB
CAPSTAN SERVO
CYLINDER SERVO
TO M II
TO M III
ON_TIMER_LED 51
PR_TIMER_LED 52
ANGLE_LED 53
REC_LED 54
MTS_IN_L 55
SAP_IN_L 56
S1_IN_L 57
3L_RST_L 58
KEY_IN_2 59
KEY_IN_3 60
KEY_IN_4 61
R_OUT 1
IIC_DATA 2
IIC_CLK 3
S2_IN_L 4
SPEAKER_MUTE_H 8
LINE_SD_L 6
HIFI_H_SW 5
COLOR_MUTE_H 7
FM_RAD_F_MONO_H 9
TV_POWER_ON_H 10
C_VIDEO 11
VSYNC 12
SW_12V 13
V_D_REC_12V 14
SW_12V_HA 15
UNSW_14V_VIDEO 16
UNSW_5V_SYSCON 17
SW_5V_VIDEO 18
UNSW_5V_VIDEO 19
SW_-5.1V 20
MOTOR_GND 21
LODING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
SIGNAL GND
VCC(14V) FOR CYLINDER & LODING MOTOR
CAPSTAN MOTOR SPEED CONTROL
CYLINDER SPEED CONTROL
CYLINDER PG/FG OUTPUT
VCC(5V)
CURRENT LIMIT FOR CAPSTAN MOTOR
VCC(14V) FOR CAPSTAN MOTOR
CAPSTAN FG OUTPUT
MOTOR GND
CAPSTAN MOTOR REVERSE(H)/FORWARD(L)

LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN I SCHEMATIC DIAGRAM

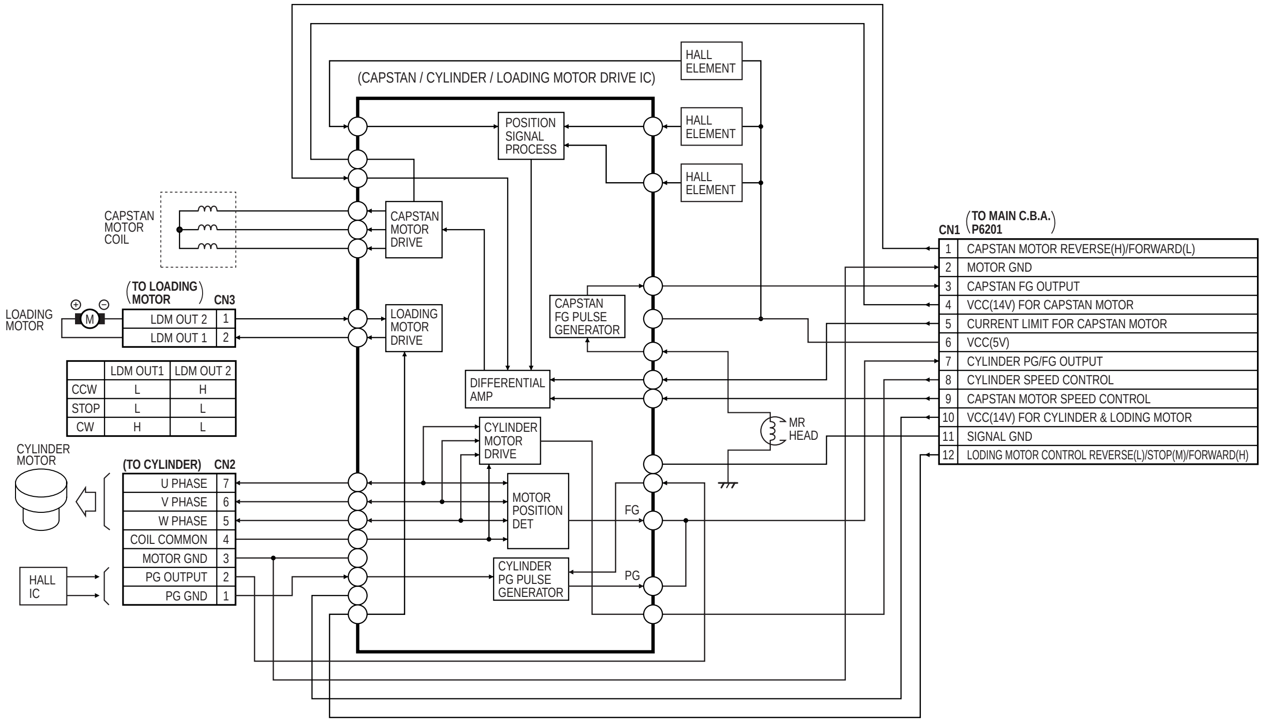
I/O CHART OF IC6001

Pin No.	I/O	Signal Name	Description
1	I	P_DOWN_L	POWER DOWN(L)
2	O	CRSS_L	CUE/REV/SS(L)
3	I	T-REEL	TAKEUP REEL PULSE
4	I	S-REEL	SUPPLY REEL PULSE
5	I	IR-DATA	IR-DATA
6	O	DEFEAT_H	AUDIO DEFEAT(H)
7	O	A_MUTE_H	AUDIO MUTE(H)
8	I	IIC_SVC_L	I2C SERVICE MODE(L)
9	I	HF_PLAY_H	Hi-Fi AUDIO PB(H)
10	-	TUNER_L	(Not used)
11	I	D_SCK	DVD SERIAL CLOCK
12	I	D_DATA_IN	DVD SERIAL DATA 0
13	O	H_DATA_OUT	DVD SERIAL DATA 1
14	O	SCK	SERIAL CLOCK
15	I	DATA_IN	SERIAL DATA 0
16	O	DATA_OUT	SERIAL DATA 1
17	I/O	IIC_DATA	I2C SERIAL DATA
18	O	IIC_CLK	I2C SERIAL CLOCK
19	I/O	BEEPER	BEEPER
20	I	S2_IN_L	LINE2 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
21	O	CAP_F/R	CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
22	O	BEEPER_ON_H	BEEPER ON(H)
23	O	HSW	HEAD SW
24	O	VLP	V-LOCK PULSE
25	I	RST	RESET(L)
26	O	3.58MHz/L	3.58MHz
27	O	HIFI_H_SW	Hi-Fi HEAD SW
28	O	POWER_ON_L	POWER ON(L)
29	O	V_D_REC_H	VIDEO DELAY REC(H)
30	I	LINE_SD_L	TV SIGNAL(L)
31	O	PHOTO_BIAS	(Not used)
32	O	COLOR_MUTE_H	COLOR MUTE(H)
33	O	CAP	CAP ERROR
34	O	CYL	CYL ERROR
35	O	AMP_MUTE_H	AUDIO AMP MUTE(H)
36	I	DVDD	VDD (+5V)
37	O	OSC_OUT	OSC 2
38	I	OSC_IN	OSC 1
39	-	DVSS	Ground
40	O	TNR_CE_H	TUNER CHIP ENABLE(H)
41	I	TNR_LOCK_L	TUNER LOCK SIGNAL(L)
42	-	SXI	SXI
43	I/O	FM_RAD_F_MONO_H/NOR_I	FM MONO(H)
44	O	TV_P_ON_H	TV POWER ON(H)
45	I	D_READY_L	DVD READY(L)
46	I	H_READY_L	HOST READY(L)
47	O	DEGAUSS_H/CV_OUT	(Not used)
48	-	VSS2_OSD	Ground
49	O	DVD_P_ON_H	DVD POWER ON(H)
50	I	CV_IN2	VIDEO

Pin No.	I/O	Signal Name	Description
51	I	VDD2_OSD	VDD (+5V)
52	O	OSD_CS_L	OSD CS(L)
53	O	LINE1_L/LINE2_H	LINE1 SIGNAL(L)/LINE2 SIGNAL(H)
54	O	FM_RAD_H	FM RADIO(H)/TV(L)
55	O	VV_H	VV(H)/EE(L)
56	I	FM_RAD_STE_L	FM RADIO STEREO(L)/MONO(H)
57	I	FM_RAD_SD_L	FM RADIO SIGNAL(L)
58	O	PLAY_L	PB(L)
59	O	DVD_H	DVD(H)
60	I/O	LOAD-F/S/R	LOADING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
61	O	A_DVD_H	AUDIO DVD(H)
62	O	HF_MUTE_H	Hi-Fi AUDIO MUTE(H)
63	O	V_MUTE_H	VIDEO MUTE(H)
64	I	S_TAB_ON_L	SAFETY TAB ON(L)
65	I	Y_PFG	CYL PG/FG
66	I	TNR_SD_L	TUNER SIGNAL(L))
67	O	FGF	CAP FG
68	I	AFG	CAP FG
69	O	VRO	V-REF 1
70	I	VRI	V-REF 2
71	-	AVSS	Ground
72	I	CTLA	CTL AMP
73	I	AVDD	VDD (+5V)
74	I/O	RCTLP	CTL PULSE(+)
75	-	RCTLN	CTL PULSE(-)
76	O	CTL_OUT	PB CONTROL PULSE
77	-	COS/PANA	(Not used)
78	I	DTS_AFC	AFC
79	I	OVER_CUR_H	OVER CURRENT(H)
80	I	T-PHOTO/M_SVC_L	TAKEUP PHOTO TR(L)/SERVICE(L)
81	I	S-PHOTO_L	SUPPLY PHOTO TR(L)
82	I	AT_ENV	ENV-VOLTAGE
83	-	L	(Not used)
84	-	L	(Not used)
85	I	KEY_IN_4	KEY DATA 4
86	I	KEY_IN_3	KEY DATA 3
87	I	KEY_IN_2	KEY DATA 2
88	I	KEY_IN_1	KEY DATA 1
89	I	KEY_IN_0	KEY DATA0
90	O	D_RST_L	DVD RESET(L)
91	O	3L_RST_L	IC5101 RESET(L)
92	I	S1_IN_L	LINE1 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
93	I	SAP_IN_L	SAP SIGNAL(L)
94	I	MTS_IN_L	MTS SIGNAL(L)
95	I	POS.3	MODE SW POSITION C
96	I	POS.2	MODE SW POSITION B
97	I	POS.1	MODE SW POSITION A
98	O	ROT_SW	ROTARY SW
99	O	HA_SW	HEAD AMP SW
100	I	D-ENV	ENVELOPE DET

CAPSTAN MOTOR ASS'Y

NOTE:
CAPSTAN MOTOR ASS'Y (REF. NO. 46) IS SUPPLIED AS A UNIT ONLY.
HOWEVER, THE FLAT FLEXIBLE CABLE (REF. NO. 48) IS AVAILABLE SEPARATELY AS A REPLACEMENT PART.


(CAPSTAN / CYLINDER / LOADING MOTOR DRIVE IC)
HALL ELEMENT
HALL ELEMENT
HALL ELEMENT
POSITION SIGNAL PROCESS
CAPSTAN MOTOR COIL
CAPSTAN MOTOR DRIVE
(TO LOADING MOTOR)
CN3
LOADING MOTOR
M
LDM OUT 2 1
LDM OUT 1 2
LOADING MOTOR DRIVE
CAPSTAN FG PULSE GENERATOR
DIFFERENTIAL AMP
CYLINDER MOTOR DRIVE
MR HEAD
CYLINDER MOTOR
(TO CYLINDER)
CN2
U PHASE 7
V PHASE 6
W PHASE 5
COIL COMMON 4
MOTOR GND 3
PG OUTPUT 2
PG GND 1
HALL IC
MOTOR POSITION DET
CYLINDER PG PULSE GENERATOR
FG
PG
CN1
(TO MAIN C.B.A. P6201)
1 CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
2 MOTOR GND
3 CAPSTAN FG OUTPUT
4 VCC(14V) FOR CAPSTAN MOTOR
5 CURRENT LIMIT FOR CAPSTAN MOTOR
6 VCC(5V)
7 CYLINDER PG/FG OUTPUT
8 CYLINDER SPEED CONTROL
9 CAPSTAN MOTOR SPEED CONTROL
10 VCC(14V) FOR CYLINDER & LODING MOTOR
11 SIGNAL GND
12 LODING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)

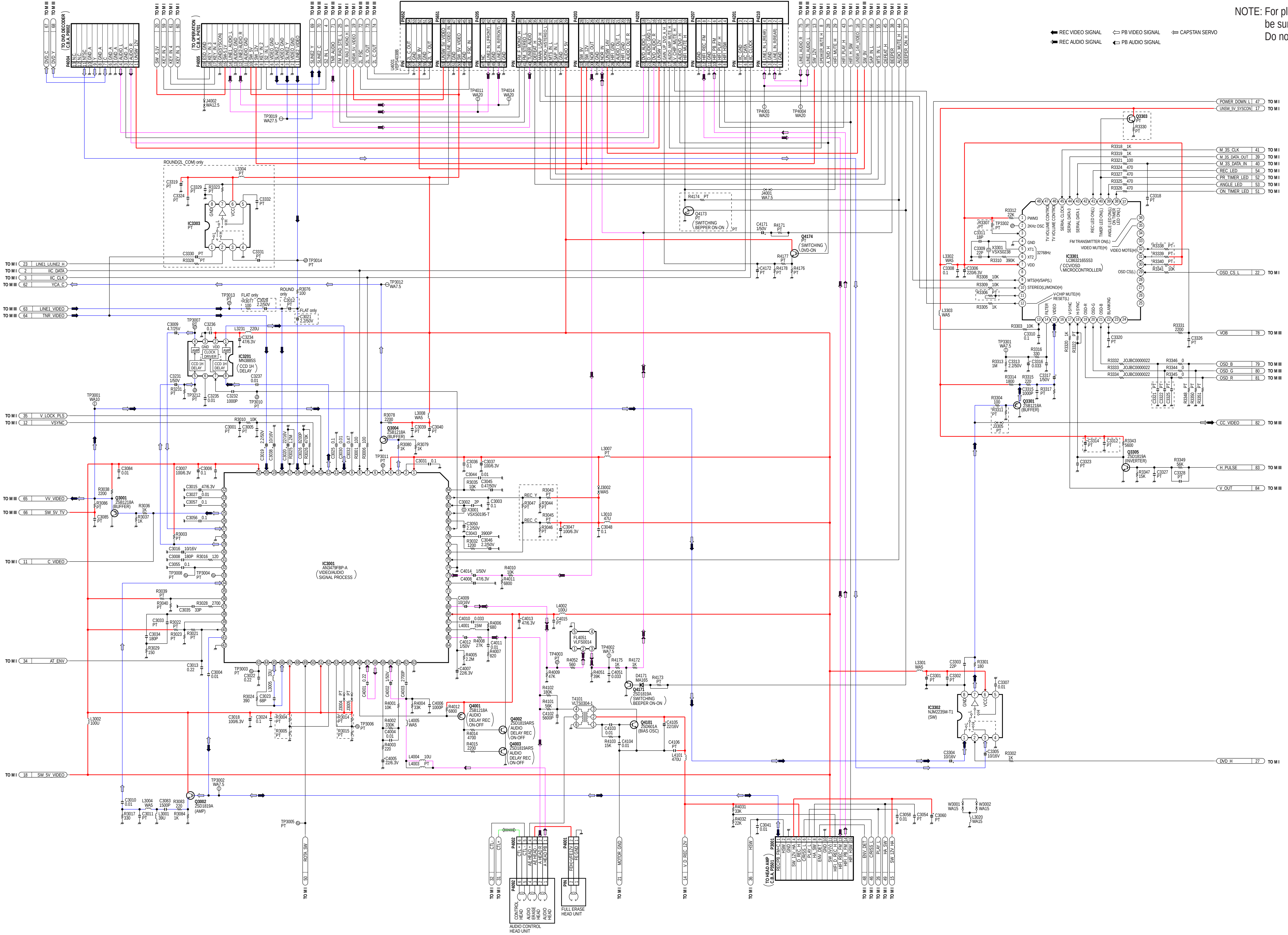
	LDM OUT1	LDM OUT 2
CCW	L	H
STOP	L	L
CW	H	L

MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



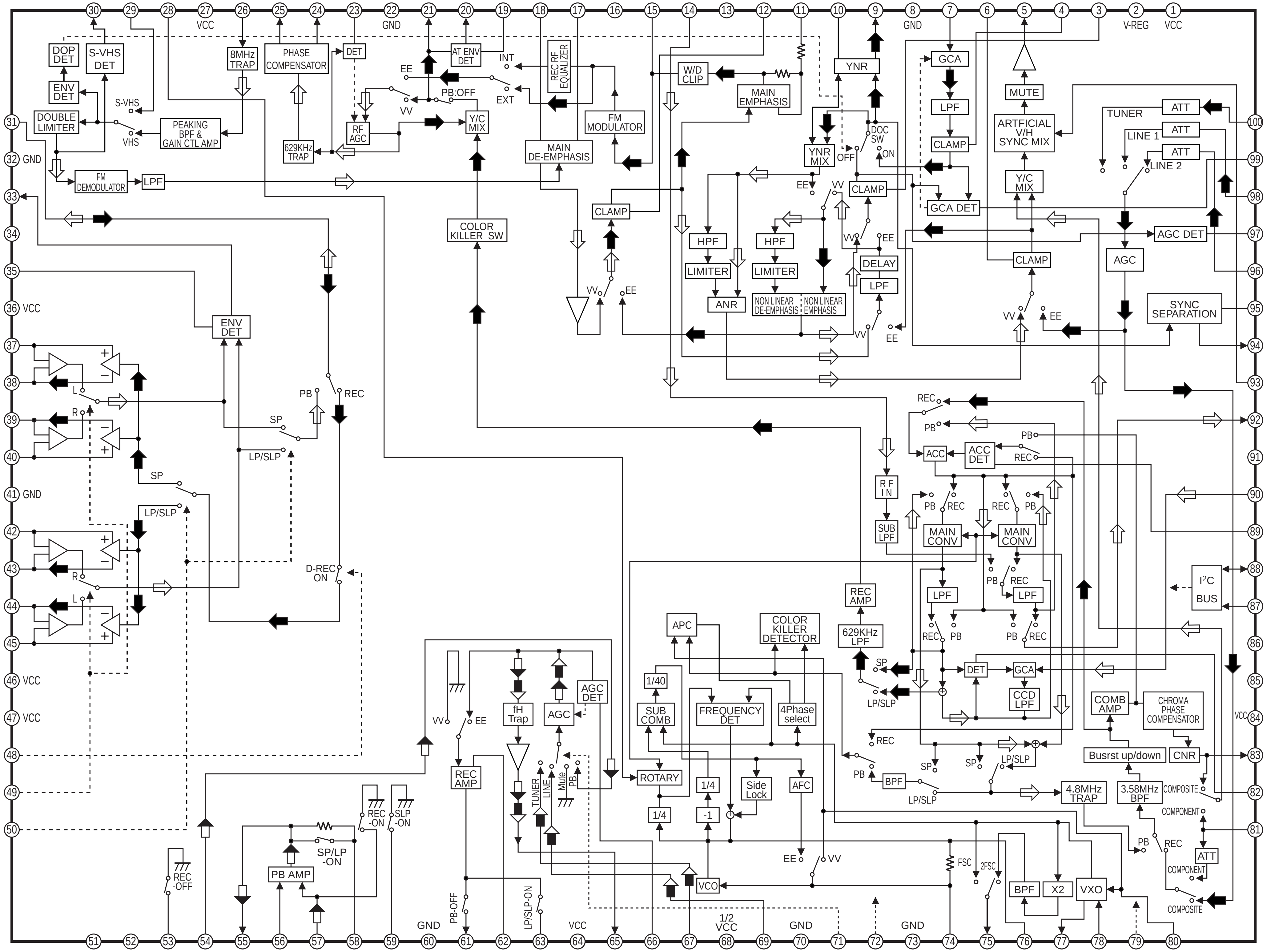
REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL
CAPSTAN SERVO
AUDIO C.B.A.
(TO DVD DECODER C.B.A. P8002)
(TO OPERATION C.B.A. P4701)
ROUND(2L_COM) only
IC3303 PT
IC3201 MN3885S (CCD 1H DELAY)
IC3001 AN3479FBP-A (VIDEO/AUDIO SIGNAL PROCESS)
IC3301 LC863285S53 (CCV/OSD MICROCONTROLLER)
IC3302 NJM2235M-T1 (SW)
Q3001 2SB1218A (BUFFER)
Q3002 2SD1819A (AMP)
Q3004 2SB1218A (BUFFER)
Q3301 2SB1218A (BUFFER)
Q3305 2SD1819A (INVERTER)
Q4001 2SB1218A AUDIO DELAY REC ON-OFF
Q4002 2SD1819ARS AUDIO DELAY REC ON-OFF
Q4003 2SD1819ARS AUDIO DELAY REC ON-OFF
Q4101 2SD601A (BIAS OSC)
Q4171 2SD1819A (SWITCHING BEEPER ON-ON)
Q4173 PT (SWITCHING BEEPER ON-ON)
Q4174 PT (SWITCHING DVD-ON)
FL4051 VLFS0014
T4101 VLTS0304-1
(TO HEAD AMP C.B.A. P3501)
AUDIO CONTROL HEAD UNIT
FULL ERASE HEAD UNIT
TO MI
TO M III

LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN II SCHEMATIC DIAGRAM

IC3001 VIDEO/AUDIO SIGNAL PROCESS / HEAD AMP IC- DETAIL BLOCK DIAGRAM

REC VIDEO SIGNAL PB VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL


VCC
GND
V-REG
DOP DET
S-VHS DET
ENV DET
DOUBLE LIMITER
S-VHS
VHS
PEAKING BPF & GAIN CTL AMP
FM DEMODULATOR
LPF
8MHz TRAP
PHASE COMPENSATOR
629KHz TRAP
DET
RF AGC
AT ENV DET
INT
EXT
EE
VV
PB:OFF
Y/C MIX
REC RF EQUALIZER
FM MODULATOR
MAIN DE-EMPHASIS
COLOR KILLER SW
CLAMP
W/D CLIP
MAIN EMPHASIS
YNR
YNR MIX
DOC SW
ON
OFF
GCA
LPF
CLAMP
GCA DET
MUTE
ARTFICIAL V/H SYNC MIX
Y/C MIX
TUNER
LINE 1
LINE 2
ATT
AGC DET
AGC
SYNC SEPARATION
HPF
LIMITER
ANR
NON LINEAR DE-EMPHASIS
NON LINEAR EMPHASIS
DELAY
ENV DET
PB
REC
SP
LP/SLP
L
R
D-REC ON
REC AMP
629KHz LPF
R F IN
SUB LPF
ACC
ACC DET
MAIN CONV
I²C BUS
DET
CCD LPF
COMB AMP
CHROMA PHASE COMPENSATOR
Busrst up/down
CNR
4.8MHz TRAP
3.58MHz BPF
COMPOSITE
COMPONENT
BPF
X2
VXO
FSC
2FSC
VCO
APC
COLOR KILLER DETECTOR
1/40
SUB COMB
FREQUENCY DET
4Phase select
ROTARY
1/4
-1
Side Lock
AFC
fH Trap
AGC
TUNER
LINE
Mute
REC -ON
SLP -ON
SP/LP -ON
PB AMP
REC -OFF
PB-OFF
LP/SLP-ON
1/2 VCC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

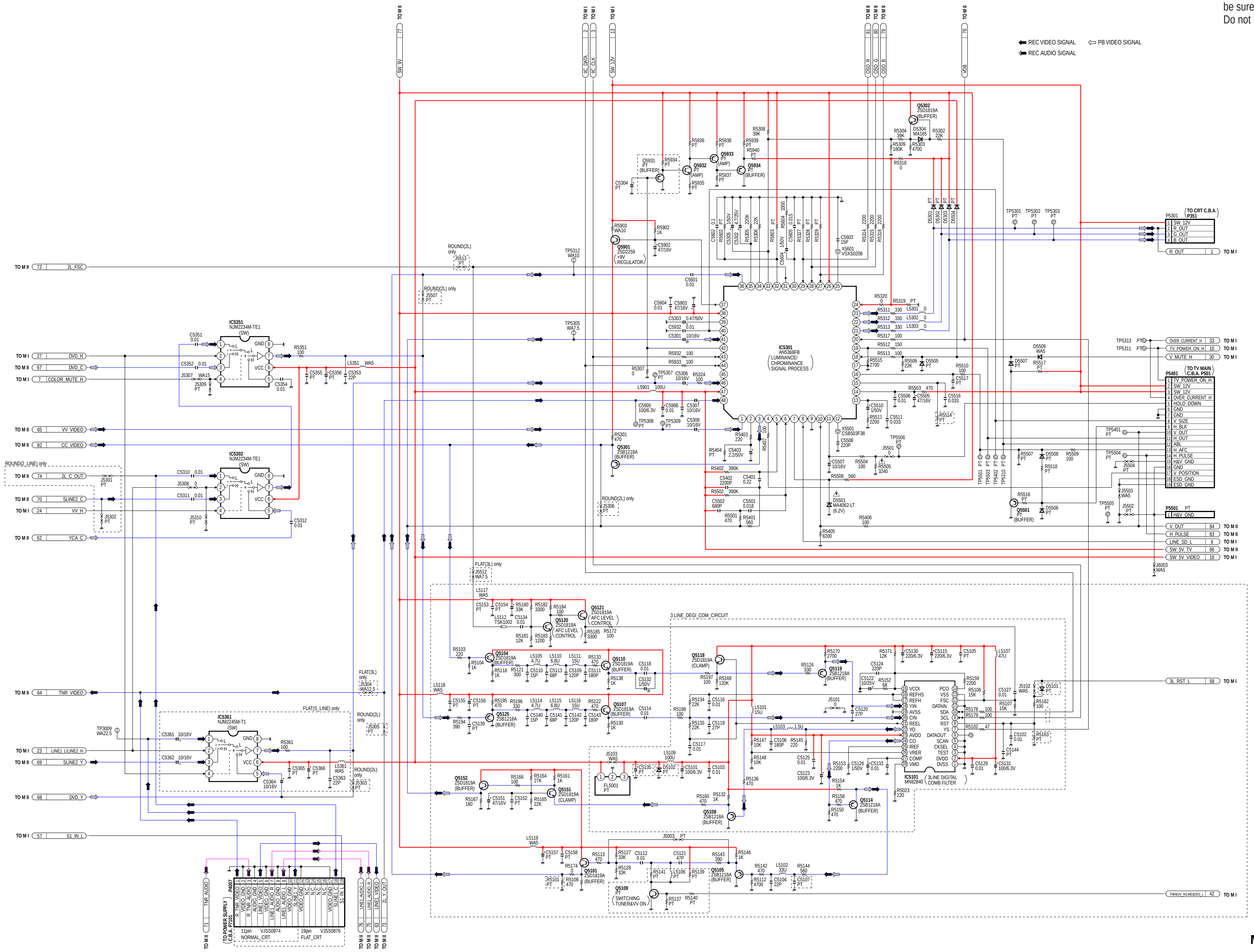
MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

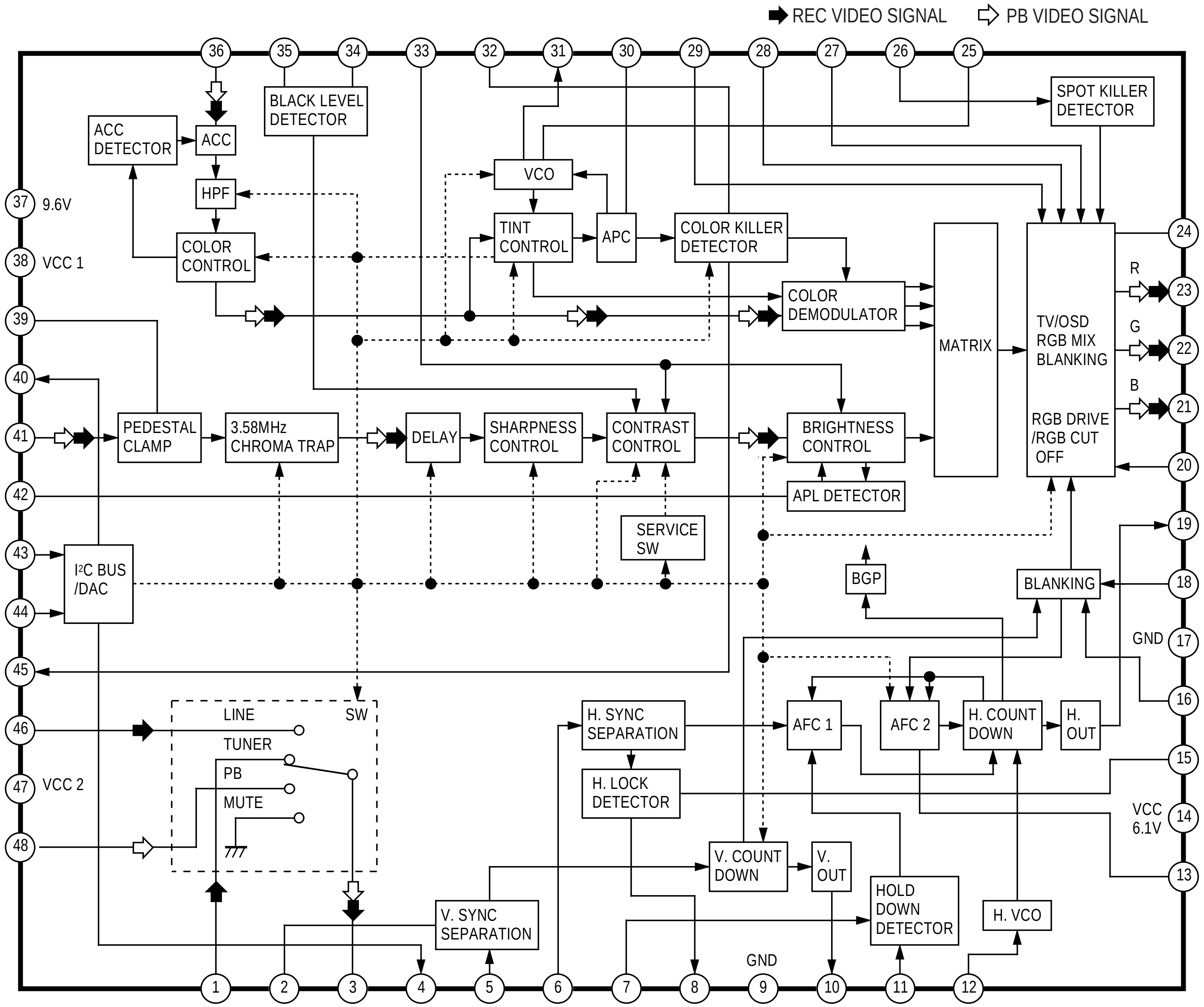


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
IC5301 AN5368FB (LUMINANCE/ CHROMINANCE SIGNAL PROCESS)
IC5351 NJM2234M-TE1 (SW)
IC5302 NJM2234M-TE1 (SW)
IC5361 NJM2245M-T1 (SW)
IC5101 MN82840 (3LINE DIGITAL COMB FILTER)
Q5302 2SD1819A (BUFFER)
Q5901 2SD2259 +9V REGULATOR
Q5301 2SB1218A (BUFFER)
Q5501 PT (BUFFER)
Q5121 2SD1819A (AFC LEVEL CONTROL)
Q5120 2SD1819A (AFC LEVEL CONTROL)
Q5104 2SD1819A (BUFFER)
Q5110 2SD1819A (BUFFER)
Q5125 2SB1218A (BUFFER)
Q5107 2SD1819A (BUFFER)
Q5118 2SD1819A (CLAMP)
Q5119 2SB1218A (BUFFER)
Q5152 2SD1819A (BUFFER)
Q5151 2SD1819A (CLAMP)
Q5108 2SB1218A (BUFFER)
Q5114 2SB1218A (BUFFER)
Q5101 2SD1819A (BUFFER)
Q5105 2SB1218A (BUFFER)
Q5109 PT (SWITCHING TUNER&VV ON)
X5601 VSX50208
X5501 CSB503F38
D5501 MA4062-LT (6.2V)
3 LINE_DEGI_COM_CIRCUIT
TO CRT C.B.A. P351
P5301
1 SW_12V
2 R_OUT
3 G_OUT
4 B_OUT
TO TV MAIN C.B.A. P501
P5401
1 TV_POWER_ON_H
2 SW_12V
3 SW_12V
4 OVER_CURRENT_H
5 HOLD_DOWN
6 GND
7 GND
8 V_SIZE
9 H_BLK
10 V_OUT
11 H_OUT
12 ABL
13 H_AFC
14 H_PULSE
15 H&V_GND
16 GND
17 V_POSITION
18 ESD_GND
19 ESD_GND
P5501 PT
1 H&V_GND
TO M II 72 2L_FSC
TO M I 27 DVD_H
TO M II 67 DVD_C
TO M I 7 COLOR_MUTE_H
TO M II 65 VV_VIDEO
TO M II 82 CC_VIDEO
TO M II 74 2L_C_OUT
TO M II 70 SLINE2_C
TO M I 24 VV_H
TO M II 62 YCA_C
TO M II 64 TNR_VIDEO
TO M I 23 LINE1_L/LINE2_H
TO M II 69 SLINE2_Y
TO M II 68 DVD_Y
TO M I 57 S1_IN_L
TO M II 77 SW_9V
TO M I 2 IIC_DATA
TO M I 3 IIC_CLK
TO M I 13 SW_12V
TO M II 81 OSD_R
TO M II 80 OSD_G
TO M II 79 OSD_B
TO M II 78 VOB
R_OUT 1 TO M I
OVER_CURRENT_H 33 TO M I
TV_POWER_ON_H 10 TO M I
V_MUTE_H 30 TO M I
V_OUT 84 TO M II
H_PULSE 83 TO M II
LINE_SD_L 6 TO M I
SW_5V_TV 66 TO M II
SW_5V_VIDEO 18 TO M I
3L_RST_L 58 TO M I
TNR&VV_H/LINE&DVD_L 42 TO M I
P4007 TO POWER SUPPLY C.B.A. P7101
11pin VJSS0874 NORMAL_CRT
19pin VJSS0876 FLAT_CRT
TO M II 71 TNR_AUDIO
TO M II 76 LINE1_AUDIO_L
TO M II 75 LINE1_AUDIO_R
TO M II 63 LINE1_VIDEO
TO M II 73 2L_Y_OUT
ROUND(2L) only
FLAT(3L) only
FLAT(S_LINE) only
ROUND(2_LINE) only

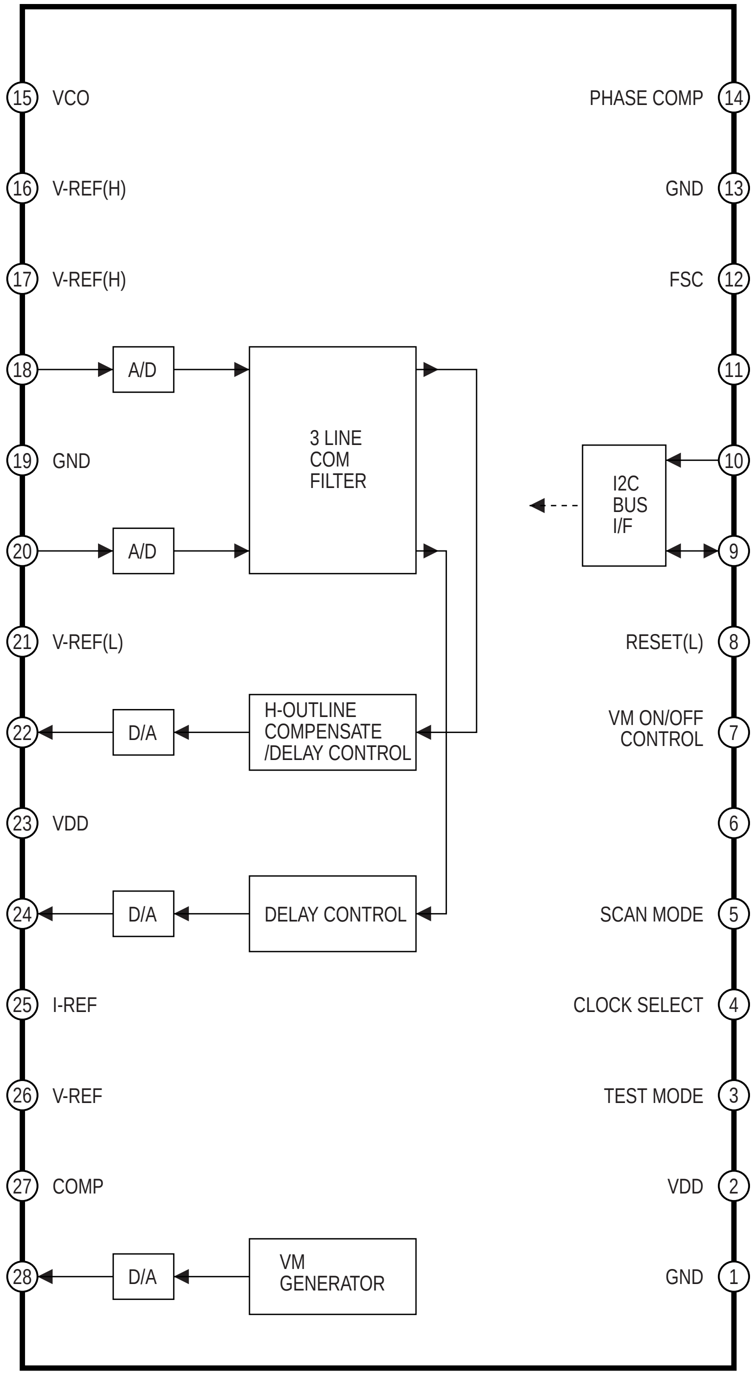
LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN III SCHEMATIC DIAGRAM

IC5301 LUMINANCE/CHROMINANCE PROCESS IC- DETAIL BLOCK DIAGRAM


REC VIDEO SIGNAL
PB VIDEO SIGNAL
36
35
34
33
32
31
30
29
28
27
26
25
BLACK LEVEL DETECTOR
SPOT KILLER DETECTOR
ACC DETECTOR
ACC
HPF
VCO
37 9.6V
38 VCC 1
COLOR CONTROL
TINT CONTROL
APC
COLOR KILLER DETECTOR
COLOR DEMODULATOR
MATRIX
TV/OSD RGB MIX BLANKING
RGB DRIVE /RGB CUT OFF
24
R
23
G
22
B
21
20
39
40
41
42
43
44
45
46
47 VCC 2
48
PEDESTAL CLAMP
3.58MHz CHROMA TRAP
DELAY
SHARPNESS CONTROL
CONTRAST CONTROL
BRIGHTNESS CONTROL
APL DETECTOR
SERVICE SW
BGP
BLANKING
19
18
GND 17
16
15
VCC 6.1V 14
13
I²C BUS /DAC
LINE
SW
TUNER
PB
MUTE
H. SYNC SEPARATION
H. LOCK DETECTOR
AFC 1
AFC 2
H. COUNT DOWN
H. OUT
V. COUNT DOWN
V. OUT
HOLD DOWN DETECTOR
H. VCO
V. SYNC SEPARATION
GND
1
2
3
4
5
6
7
8
9
10
11
12

IC5101 3LINE DEGI COM IC- DETAIL BLOCK DIAGRAM

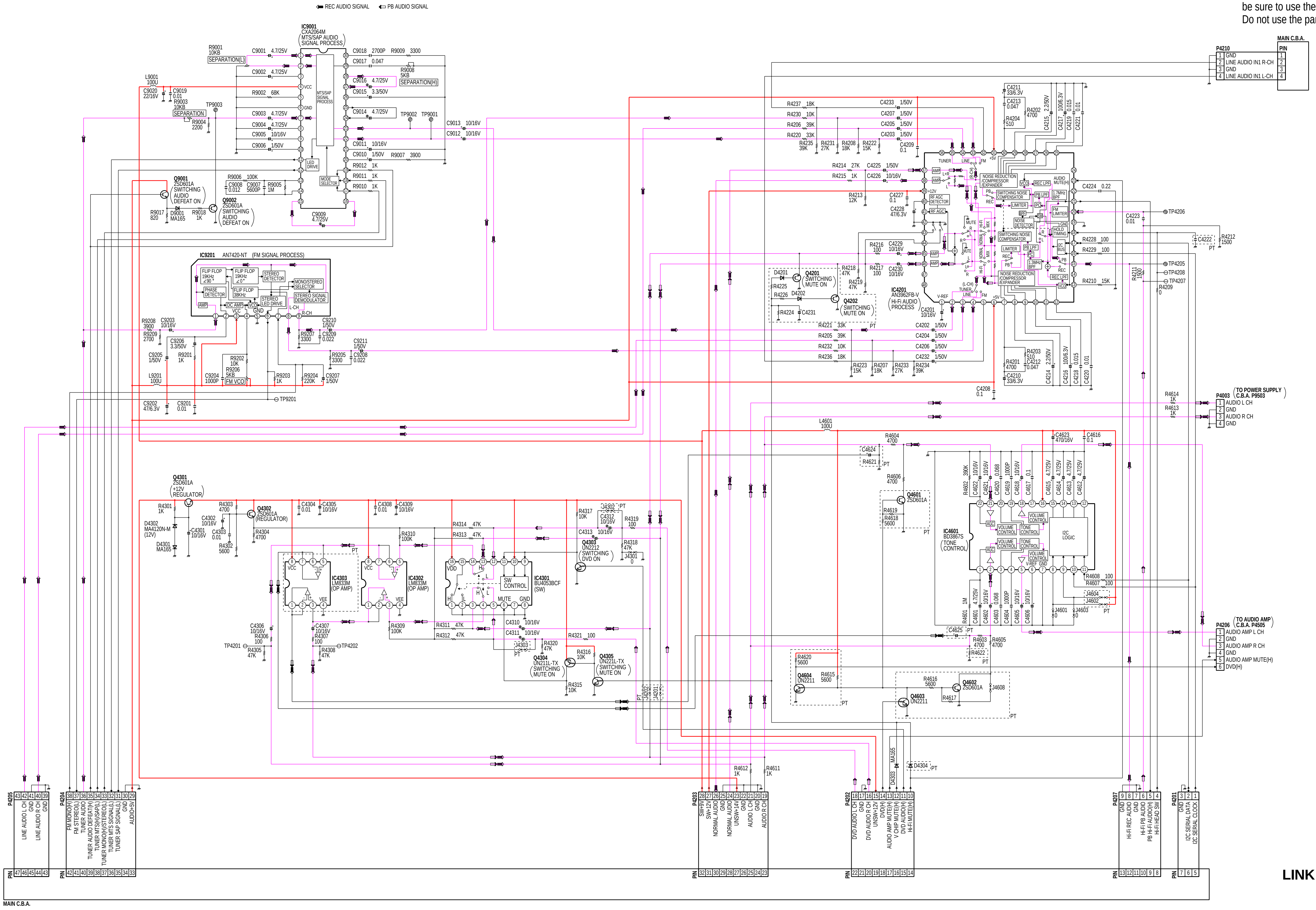

15 VCO
16 V-REF(H)
17 V-REF(H)
18
19 GND
20
21 V-REF(L)
22
23 VDD
24
25 I-REF
26 V-REF
27 COMP
28
PHASE COMP 14
GND 13
FSC 12
11
10
9
RESET(L) 8
VM ON/OFF CONTROL 7
6
SCAN MODE 5
CLOCK SELECT 4
TEST MODE 3
VDD 2
GND 1
A/D
A/D
3 LINE COM FILTER
I2C BUS I/F
D/A
H-OUTLINE COMPENSATE /DELAY CONTROL
D/A
DELAY CONTROL
D/A
VM GENERATOR

AUDIO SCHEMATIC I DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

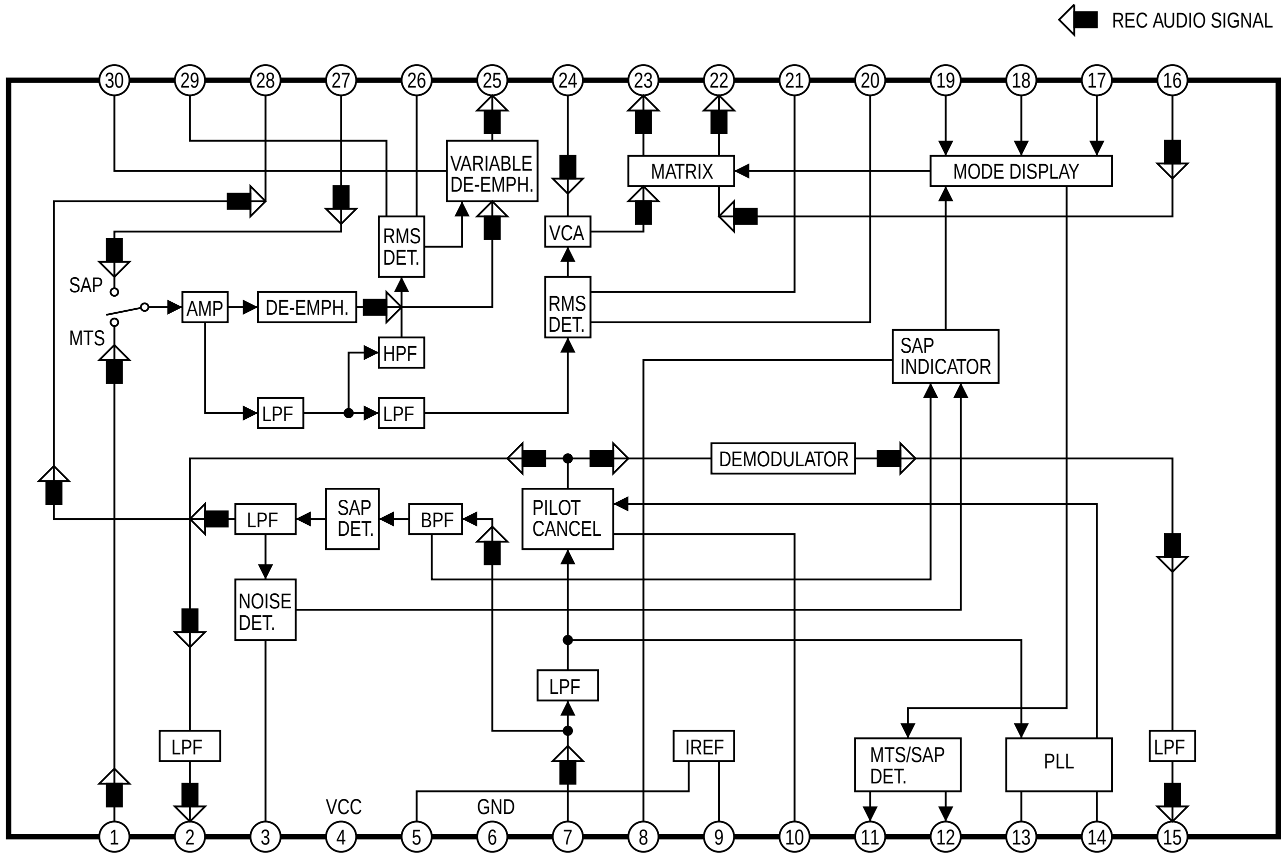


REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC9001 CXA2064M (MTS/SAP AUDIO SIGNAL PROCESS)
Q9001 2SD601A (SWITCHING AUDIO DEFEAT ON)
Q9002 2SD601A (SWITCHING AUDIO DEFEAT ON)
IC9201 AN7420-NT (FM SIGNAL PROCESS)
IC4201 AN3962FB-V (Hi-Fi AUDIO PROCESS)
Q4201 (SWITCHING MUTE ON)
Q4202 (SWITCHING MUTE ON)
Q4301 2SD601A (+12V REGULATOR)
Q4302 2SD601A (REGULATOR)
IC4303 LM833M (OP AMP)
IC4302 LM833M (OP AMP)
IC4301 BU4053BCF (SW)
Q4303 UN2212 (SWITCHING DVD ON)
Q4304 UN211L-TX (SWITCHING MUTE ON)
Q4305 UN221L-TX (SWITCHING MUTE ON)
IC4601 BD3867S (TONE CONTROL)
Q4601 2SD601A
Q4602 2SD601A
Q4603 UN2211
Q4604 UN2211
MAIN C.B.A.
P4210
1 GND
2 LINE AUDIO IN1 R-CH
3 GND
4 LINE AUDIO IN1 L-CH
P4003 (TO POWER SUPPLY C.B.A. P9503)
1 AUDIO L CH
2 GND
3 AUDIO R CH
4 GND
P4206 (TO AUDIO AMP C.B.A. P4505)
1 AUDIO AMP L CH
2 GND
3 AUDIO AMP R CH
4 GND
5 AUDIO AMP MUTE(H)
6 DVD(H)
P4205
LINE AUDIO L CH
GND
LINE AUDIO R CH
GND
P4204
FM MONO(H)
FM STEREO(L)
TUNER AUDIO
TUNER AUDIO DEFEAT(H)
TUNER MTS(H)/SAP(L)
TUNER MONO(H)/STEREO(L)
TUNER MTS SIGNAL(L)
TUNER SAP SIGNAL(L)
GND
AUDIO+5V
P4203
SW+9V
SW+12V
NORMAL AUDIO
GND
NORMAL AUDIO
UNSW+14V
GND
AUDIO L CH
GND
AUDIO R CH
P4202
DVD AUDIO L CH
GND
DVD AUDIO R CH
UNSW+12V
DVD(H)
AUDIO AMP MUTE(H)
V CHIP MUTE(H)
DVD AUDIO(H)
Hi-Fi MUTE(H)
P4207
GND
Hi-Fi REC AUDIO
GND
Hi-Fi PB AUDIO
PB Hi-Fi AUDIO(H)
Hi-Fi HEAD SW
P4201
GND
I2C SERIAL DATA
I2C SERIAL CLOCK

LINK TO VOLTAGE CHART

VJBS4038
PV-DF2002
AUDIO SCHEMATIC I DIAGRAM

IC9001 MTS/SAP AUDIO PROCESS IC- DETAIL BLOCK DIAGRAM

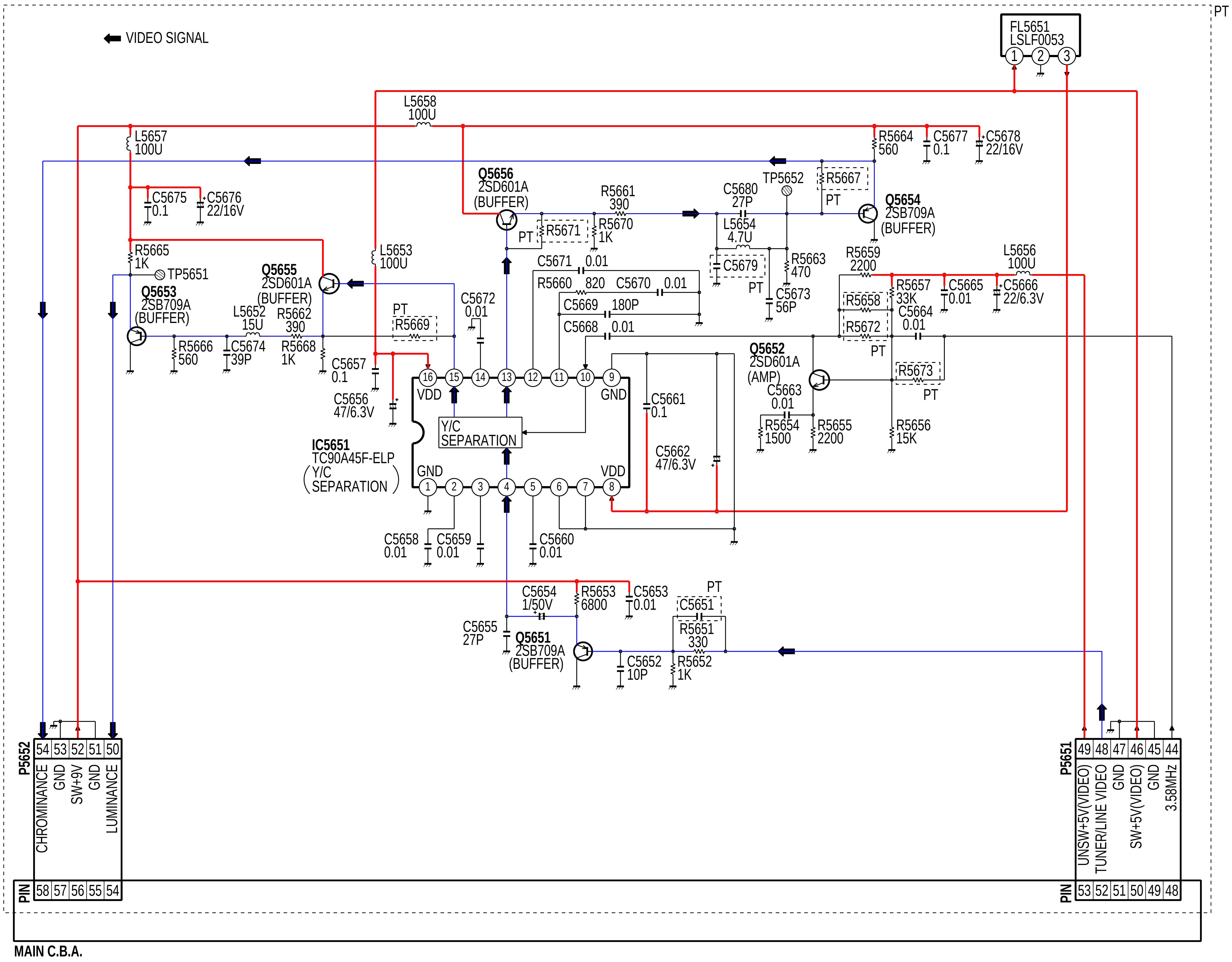

REC AUDIO SIGNAL
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
VARIABLE DE-EMPH.
MATRIX
MODE DISPLAY
VCA
RMS DET.
SAP
MTS
AMP
DE-EMPH.
HPF
RMS DET.
SAP INDICATOR
LPF
LPF
DEMODULATOR
LPF
SAP DET.
BPF
PILOT CANCEL
NOISE DET.
LPF
LPF
IREF
MTS/SAP DET.
PLL
LPF
VCC
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

AUDIO SCHEMATIC II DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



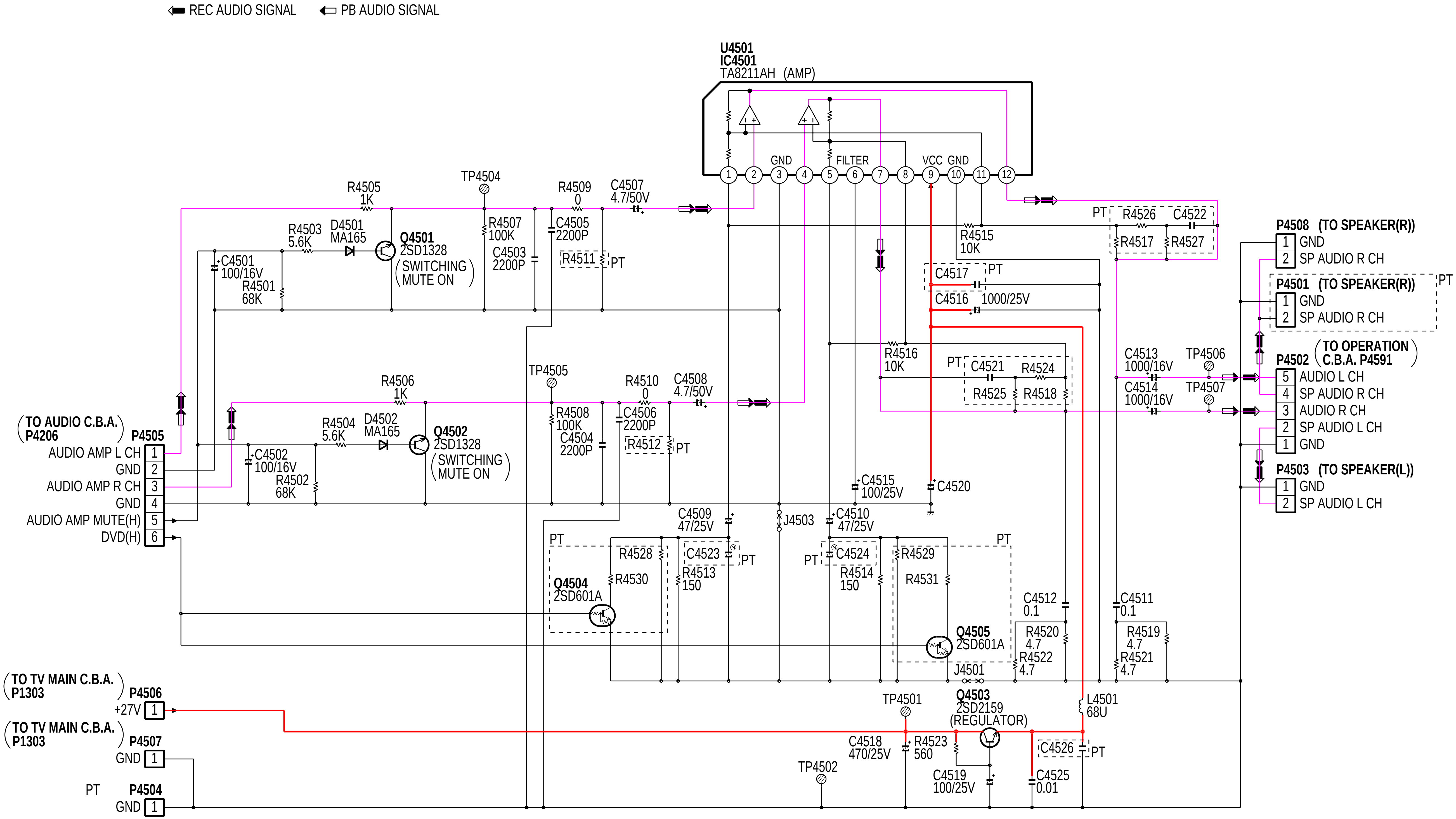
PT
VIDEO SIGNAL
FL5651
LSLF0053
L5658
100U
L5657
100U
R5664
560
C5677
0.1
C5678
22/16V
C5675
0.1
C5676
22/16V
Q5656
2SD601A
(BUFFER)
R5661
390
C5680
27P
TP5652
R5667
PT
Q5654
2SB709A
(BUFFER)
PT
R5671
R5670
1K
L5654
4.7U
C5679
PT
R5663
470
C5673
56P
R5665
1K
TP5651
L5653
100U
C5671
0.01
R5660
820
C5670
0.01
R5659
2200
L5656
100U
Q5655
2SD601A
(BUFFER)
Q5653
2SB709A
(BUFFER)
L5652
15U
R5662
390
PT
R5669
C5672
0.01
C5669
180P
C5668
0.01
R5657
33K
C5665
0.01
C5666
22/6.3V
R5658
C5664
0.01
R5672
PT
R5666
560
C5674
39P
R5668
1K
C5657
0.1
C5656
47/6.3V
Q5652
2SD601A
(AMP)
R5673
PT
C5663
0.01
VDD
GND
C5661
0.1
Y/C
SEPARATION
R5654
1500
R5655
2200
R5656
15K
IC5651
TC90A45F-ELP
(Y/C
SEPARATION)
GND
VDD
C5662
47/6.3V
C5658
0.01
C5659
0.01
C5660
0.01
C5654
1/50V
R5653
6800
C5653
0.01
PT
C5651
C5655
27P
Q5651
2SB709A
(BUFFER)
R5651
330
C5652
10P
R5652
1K
P5652
54 53 52 51 50
CHROMINANCE
GND
SW+9V
GND
LUMINANCE
PIN
58 57 56 55 54
P5651
49 48 47 46 45 44
UNSW+5V(VIDEO)
TUNER/LINE VIDEO
GND
SW+5V(VIDEO)
GND
3.58MHz
PIN
53 52 51 50 49 48
MAIN C.B.A.

AUDIO AMP SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



REC AUDIO SIGNAL
PB AUDIO SIGNAL
U4501
IC4501
TA8211AH (AMP)
GND
FILTER
VCC
GND
1
2
3
4
5
6
7
8
9
10
11
12
TP4504
R4505 1K
R4509 0
C4507 4.7/50V
R4503 5.6K
D4501 MA165
Q4501 2SD1328
(SWITCHING MUTE ON)
R4507 100K
C4505 2200P
C4503 2200P
R4511
PT
C4501 100/16V
R4501 68K
R4515 10K
PT
R4526
C4522
R4517
R4527
C4517
PT
C4516 1000/25V
P4508 (TO SPEAKER(R))
1 GND
2 SP AUDIO R CH
P4501 (TO SPEAKER(R))
1 GND
2 SP AUDIO R CH
PT
R4516 10K
PT
C4521
R4524
R4525
R4518
C4513 1000/16V
C4514 1000/16V
TP4506
TP4507
P4502 (TO OPERATION C.B.A. P4591)
5 AUDIO L CH
4 SP AUDIO R CH
3 AUDIO R CH
2 SP AUDIO L CH
1 GND
P4503 (TO SPEAKER(L))
1 GND
2 SP AUDIO L CH
TP4505
R4506 1K
R4510 0
C4508 4.7/50V
R4504 5.6K
D4502 MA165
Q4502 2SD1328
(SWITCHING MUTE ON)
R4508 100K
C4504 2200P
C4506 2200P
R4512
PT
(TO AUDIO C.B.A. P4206)
P4505
AUDIO AMP L CH 1
GND 2
AUDIO AMP R CH 3
GND 4
AUDIO AMP MUTE(H) 5
DVD(H) 6
C4502 100/16V
R4502 68K
C4515 100/25V
C4520
C4509 47/25V
J4503
C4510 47/25V
PT
R4528
R4530
Q4504 2SD601A
C4523
PT
R4513 150
PT
C4524
R4514 150
R4529
R4531
PT
Q4505 2SD601A
C4512 0.1
C4511 0.1
R4520 4.7
R4522 4.7
R4519 4.7
R4521 4.7
J4501
(TO TV MAIN C.B.A. P1303)
P4506
+27V 1
(TO TV MAIN C.B.A. P1303)
P4507
GND 1
PT
P4504
GND 1
TP4501
Q4503 2SD2159 (REGULATOR)
L4501 68U
C4518 470/25V
R4523 560
C4519 100/25V
C4526
PT
C4525 0.01
TP4502

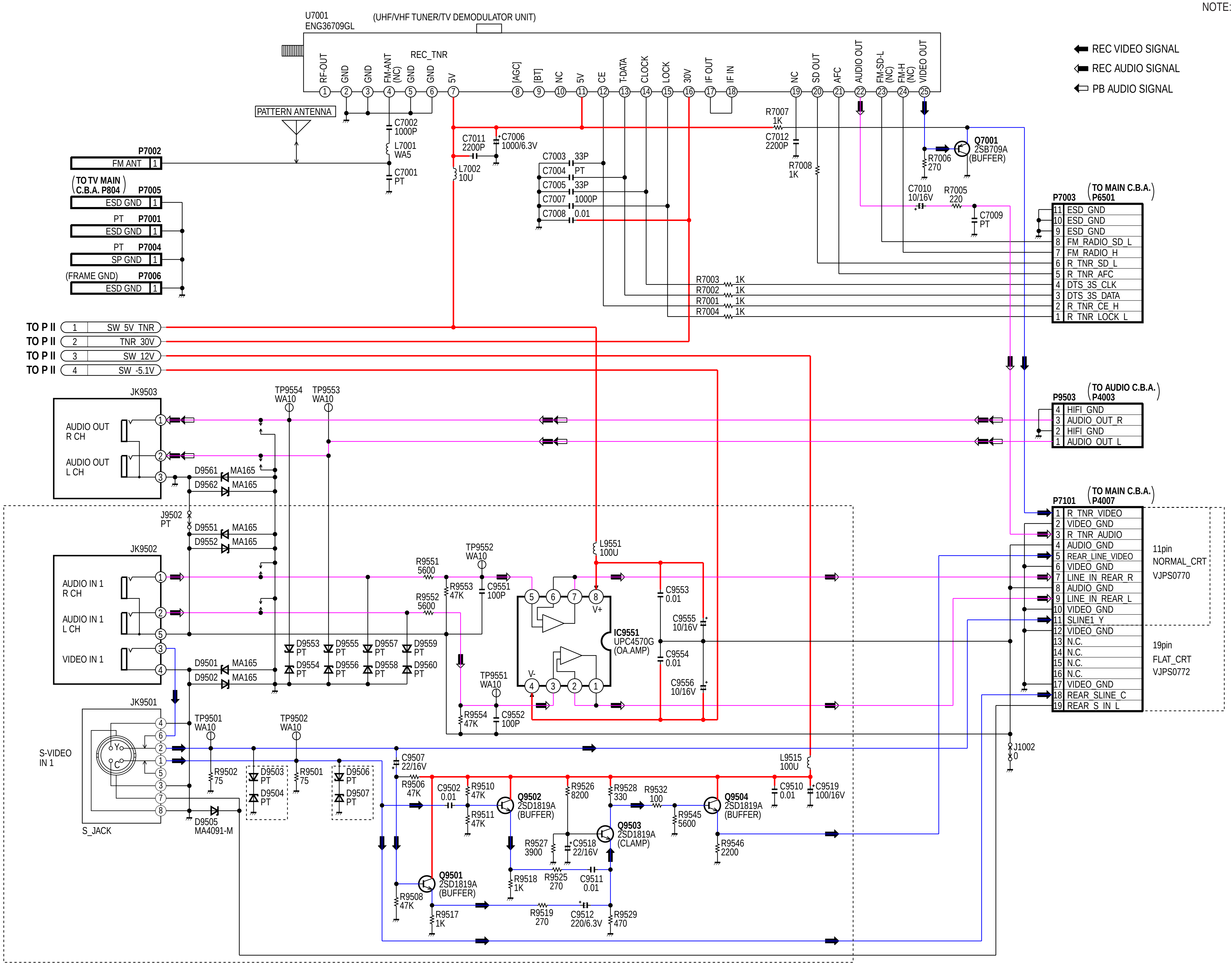
LINK TO VOLTAGE CHART

POWER SUPPLY I SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



U7001
ENG36709GL
(UHF/VHF TUNER/TV DEMODULATOR UNIT)
RF-OUT
GND
GND
FM-ANT (NC)
GND
GND
5V
[AGC]
[BT]
NC
5V
CE
T-DATA
CLOCK
LOCK
30V
IF OUT
IF IN
NC
SD OUT
AFC
AUDIO OUT
FM-SD-L (NC)
FM-H (NC)
VIDEO OUT
REC_TNR
PATTERN ANTENNA
C7002 1000P
L7001 WA5
C7001 PT
C7011 2200P
C7006 1000/6.3V
L7002 10U
C7003 33P
C7004 PT
C7005 33P
C7007 1000P
C7008 0.01
R7007 1K
C7012 2200P
R7008 1K
Q7001 2SB709A (BUFFER)
R7006 270
C7010 10/16V
R7005 220
C7009 PT
R7003 1K
R7002 1K
R7001 1K
R7004 1K
P7002
FM ANT 1
(TO TV MAIN C.B.A. P804)
P7005
ESD GND 1
PT P7001
ESD GND 1
PT P7004
SP GND 1
(FRAME GND) P7006
ESD GND 1
P7003 (TO MAIN C.B.A. P6501)
11 ESD_GND
10 ESD_GND
9 ESD_GND
8 FM_RADIO_SD_L
7 FM_RADIO_H
6 R_TNR_SD_L
5 R_TNR_AFC
4 DTS_3S_CLK
3 DTS_3S_DATA
2 R_TNR_CE_H
1 R_TNR_LOCK_L
TO P II 1 SW_5V_TNR
TO P II 2 TNR_30V
TO P II 3 SW_12V
TO P II 4 SW_-5.1V
JK9503
AUDIO OUT R CH
AUDIO OUT L CH
TP9554 WA10
TP9553 WA10
D9561 MA165
D9562 MA165
J9502 PT
D9551 MA165
D9552 MA165
P9503 (TO AUDIO C.B.A. P4003)
4 HIFI_GND
3 AUDIO_OUT_R
2 HIFI_GND
1 AUDIO_OUT_L
JK9502
AUDIO IN 1 R CH
AUDIO IN 1 L CH
VIDEO IN 1
R9551 5600
R9553 47K
TP9552 WA10
C9551 100P
R9552 5600
L9551 100U
C9553 0.01
C9555 10/16V
IC9551 UPC4570G (OA.AMP)
V+
V-
C9554 0.01
C9556 10/16V
D9501 MA165
D9502 MA165
D9553 PT
D9554 PT
D9555 PT
D9556 PT
D9557 PT
D9558 PT
D9559 PT
D9560 PT
TP9551 WA10
R9554 47K
C9552 100P
P7101 (TO MAIN C.B.A. P4007)
1 R_TNR_VIDEO
2 VIDEO_GND
3 R_TNR_AUDIO
4 AUDIO_GND
5 REAR_LINE_VIDEO
6 VIDEO_GND
7 LINE_IN_REAR_R
8 AUDIO_GND
9 LINE_IN_REAR_L
10 VIDEO_GND
11 SLINE1_Y
12 VIDEO_GND
13 N.C.
14 N.C.
15 N.C.
16 N.C.
17 VIDEO_GND
18 REAR_SLINE_C
19 REAR_S_IN_L
11pin NORMAL_CRT VJPS0770
19pin FLAT_CRT VJPS0772
J1002 0
JK9501
S-VIDEO IN 1
S_JACK
TP9501 WA10
TP9502 WA10
R9502 75
D9503 PT
D9504 PT
R9501 75
D9506 PT
D9507 PT
D9505 MA4091-M
C9507 22/16V
R9506 47K
C9502 0.01
R9510 47K
R9511 47K
Q9502 2SD1819A (BUFFER)
R9526 8200
R9528 330
R9532 100
R9545 5600
Q9504 2SD1819A (BUFFER)
L9515 100U
C9510 0.01
C9519 100/16V
Q9503 2SD1819A (CLAMP)
R9527 3900
C9518 22/16V
R9546 2200
R9518 1K
R9525 270
C9511 0.01
Q9501 2SD1819A (BUFFER)
R9508 47K
R9517 1K
R9519 270
C9512 220/6.3V
R9529 470

⬅ REC VIDEO SIGNAL

⬅ REC AUDIO SIGNAL

⇦ PB AUDIO SIGNAL

LINK TO VOLTAGE CHART

POWER SUPPLY II SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

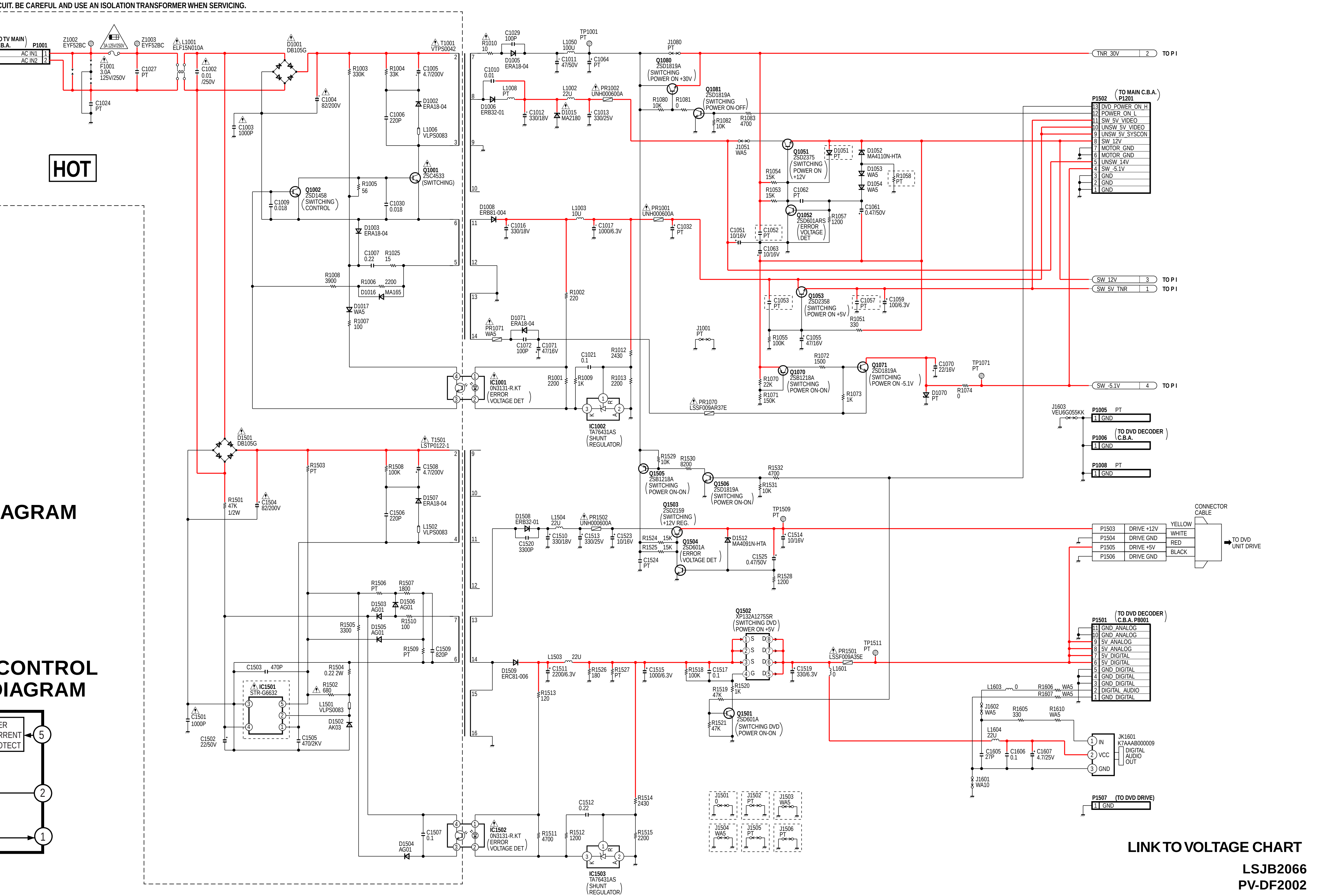
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

3A 125V/250V

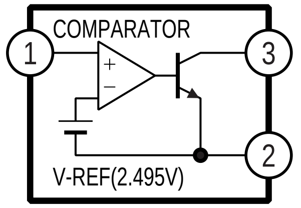
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 3A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

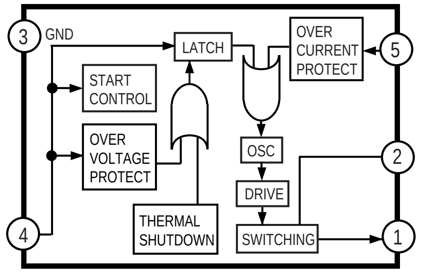
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.


HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.
HOT
(TO TV MAIN C.B.A.) P1001
AC IN1
AC IN2
Z1002 EYF52BC
Z1003 EYF52BC
F1001 3.0A 125V/250V
L1001 ELF15N010A
D1001 DB105G
T1001 VTPS0042
Q1001 2SC4533 (SWITCHING)
Q1002 2SD1458 (SWITCHING CONTROL)
IC1001 0N3131-R.KT (ERROR VOLTAGE DET)
IC1002 TA76431AS (SHUNT REGULATOR)
Q1080 2SD1819A (SWITCHING POWER ON +30V)
Q1081 2SD1819A (SWITCHING POWER ON-OFF)
Q1051 2SD2375 (SWITCHING POWER ON +12V)
Q1052 2SD601ARS (ERROR VOLTAGE DET)
Q1053 2SD2358 (SWITCHING POWER ON +5V)
Q1070 2SB1218A (SWITCHING POWER ON-ON)
Q1071 2SD1819A (SWITCHING POWER ON -5.1V)
TNR_30V
SW_12V
SW_5V_TNR
SW_-5.1V
TO P.I
(TO MAIN C.B.A.) P1502 P1201
DVD_POWER_ON_H
POWER_ON_L
SW_5V_VIDEO
UNSW_5V_VIDEO
UNSW_5V_SYSCON
SW_12V
MOTOR_GND
MOTOR_GND
UNSW_14V
SW_-5.1V
GND
GND
GND
D1501 DB105G
T1501 LSTP0122-1
IC1501 STR-G6632
IC1502 0N3131-R.KT (ERROR VOLTAGE DET)
IC1503 TA76431AS (SHUNT REGULATOR)
Q1505 2SB1218A (SWITCHING POWER ON-ON)
Q1506 2SD1819A (SWITCHING POWER ON-ON)
Q1503 2SD2159 (SWITCHING +12V REG.)
Q1504 2SD601A (ERROR VOLTAGE DET)
Q1502 XP132A1275SR (SWITCHING DVD POWER ON +5V)
Q1501 2SD601A (SWITCHING DVD POWER ON-ON)
CONNECTOR CABLE
P1503 DRIVE +12V YELLOW
P1504 DRIVE GND WHITE
P1505 DRIVE +5V RED
P1506 DRIVE GND BLACK
TO DVD UNIT DRIVE
P1005 PT GND
P1006 (TO DVD DECODER C.B.A.) GND
P1008 PT GND
(TO DVD DECODER C.B.A. P8001) P1501
GND_ANALOG
GND_ANALOG
5V_ANALOG
5V_ANALOG
5V_DIGITAL
5V_DIGITAL
GND_DIGITAL
GND_DIGITAL
GND_DIGITAL
DIGITAL_AUDIO
GND_DIGITAL
JK1601 K7AAAB000009 DIGITAL AUDIO OUT
IN
VCC
GND
P1507 (TO DVD DRIVE) GND

IC1002,IC1503
SHUNT REGULATOR
IC- DETAIL BLOCK DIAGRAM


COMPARATOR
1
3
2
+
−
V-REF(2.495V)

IC1501 SWITCHING CONTROL
IC- DETAIL BLOCK DIAGRAM


3
GND
LATCH
OVER CURRENT PROTECT
5
START CONTROL
OVER VOLTAGE PROTECT
OSC
2
DRIVE
THERMAL SHUTDOWN
SWITCHING
4
1

LINK TO VOLTAGE CHART

LSJB2066
PV-DF2002
POWER SUPPLY II SCHEMATIC DIAGRAM

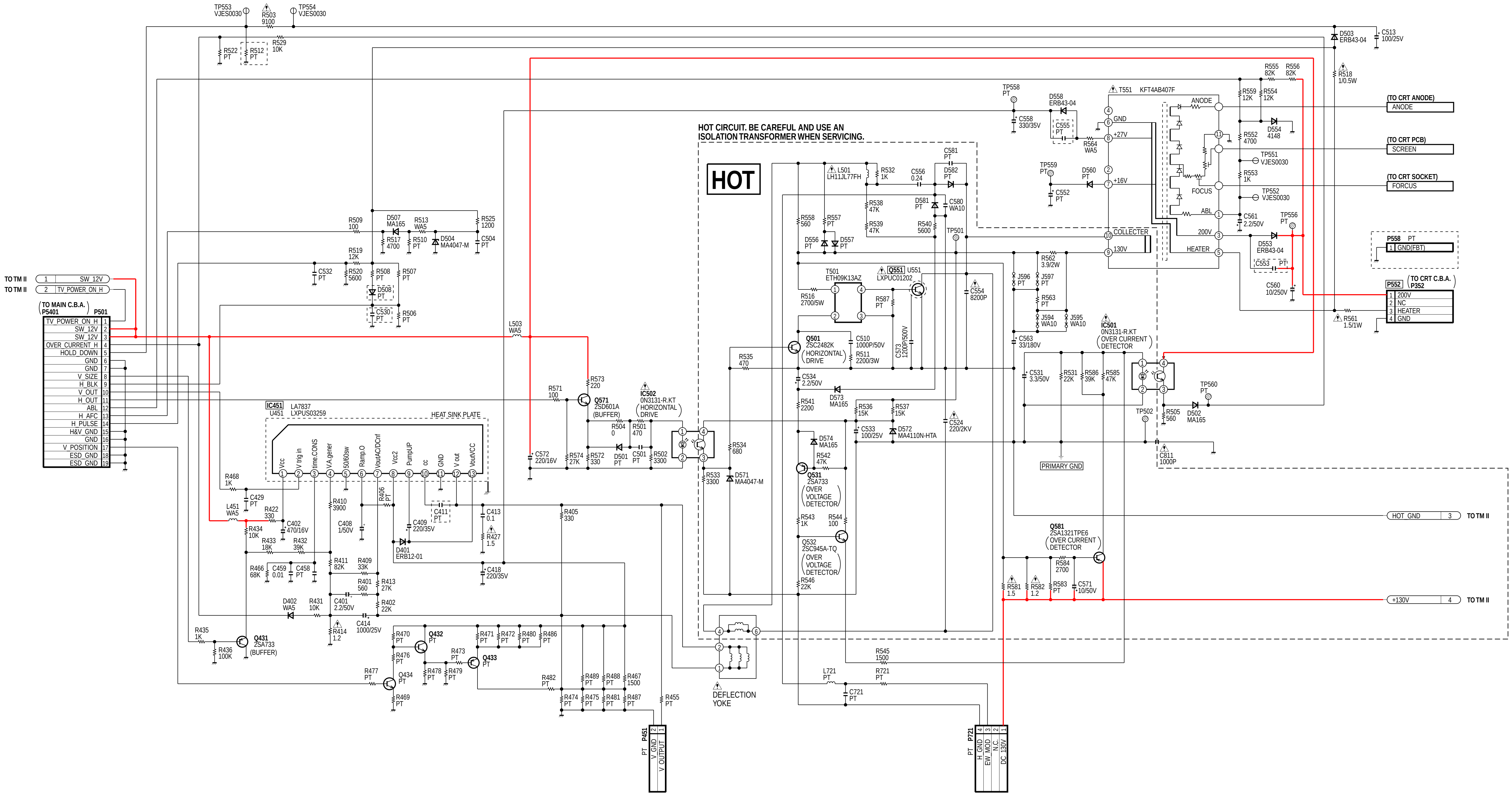
TV MAIN I SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



TP553 VJES0030
R503 9100
TP554 VJES0030
R529 10K
R522 PT
R512 PT
D503 ERB43-04
C513 100/25V
R518 1/0.5W
R555 82K
R556 82K
TP558 PT
D558 ERB43-04
T551 KFT4AB407F
ANODE
R559 12K
R554 12K
(TO CRT ANODE)
ANODE
C558 330/35V
C555 PT
GND
+27V
R564 WA5
D554 4148
R552 4700
(TO CRT PCB)
SCREEN
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.
HOT
TP559 PT
D560 PT
+16V
C552 PT
TP551 VJES0030
R553 1K
FOCUS
(TO CRT SOCKET)
FORCUS
TP552 VJES0030
C581 PT
L501 LH11JL77FH
R532 1K
C556 0.24
D582 PT
R538 47K
D581 PT
C580 WA10
R558 560
R557 PT
R539 47K
R540 5600
TP501
D556 PT
D557 PT
COLLECTOR
130V
ABL
200V
HEATER
C561 2.2/50V
TP556 PT
D553 ERB43-04
C553 PT
P558 PT
1 GND(FBT)
R562 3.9/2W
J596 PT
J597 PT
R563 PT
J594 WA10
J595 WA10
C560 10/250V
(TO CRT C.B.A.)
P552
P352
1 200V
2 NC
3 HEATER
4 GND
R561 1.5/1W
T501 ETH09K13AZ
Q551 U551 LXPUC01202
C554 8200P
R516 2700/5W
R587 PT
C573 1200P/500V
IC501 0N3131-R.KT (OVER CURRENT DETECTOR)
C563 33/180V
Q501 2SC2482K (HORIZONTAL DRIVE)
C510 1000P/50V
R511 2200/3W
R535 470
C534 2.2/50V
C531 3.3/50V
R531 22K
R586 39K
R585 47K
TP560 PT
TP502
R505 560
D502 MA165
R541 2200
D573 MA165
R536 15K
R537 15K
C524 220/2KV
C533 100/25V
D572 MA4110N-HTA
C811 1000P
PRIMARY GND
TO TM II
1 SW_12V
2 TV_POWER_ON_H
(TO MAIN C.B.A.)
P5401
P501
TV_POWER_ON_H 1
SW_12V 2
SW_12V 3
OVER_CURRENT_H 4
HOLD_DOWN 5
GND 6
GND 7
V_SIZE 8
H_BLK 9
V_OUT 10
H_OUT 11
ABL 12
H_AFC 13
H_PULSE 14
H&V_GND 15
GND 16
V_POSITION 17
ESD_GND 18
ESD_GND 19
R509 100
D507 MA165
R513 WA5
R525 1200
R517 4700
R510 PT
D504 MA4047-M
C504 PT
R519 12K
C532 PT
R520 5600
R508 PT
R507 PT
D508 PT
C530 PT
R506 PT
L503 WA5
R571 100
R573 220
Q571 2SD601A (BUFFER)
IC502 0N3131-R.KT (HORIZONTAL DRIVE)
R504 0
R501 470
C572 220/16V
R574 27K
R572 330
D501 PT
C501 PT
R502 3300
R534 680
R533 3300
D571 MA4047-M
D574 MA165
R542 47K
Q531 2SA733 (OVER VOLTAGE DETECTOR)
R543 1K
R544 100
Q532 2SC945A-TQ (OVER VOLTAGE DETECTOR)
R546 22K
IC451 U451 LA7837 LXPUS03259
HEAT SINK PLATE
Vcc
V trig in
Vline.CONS
VA gener
50/60sw
Ramp O
VoutAC/DCnf
Vcc2
PumpUP
cc
GND
V out
VoutVCC
R468 1K
C429 PT
L451 WA5
R422 330
R434 10K
C402 470/16V
R433 18K
R432 39K
R410 3900
R406 PT
C408 1/50V
C411 PT
C409 220/35V
C413 0.1
R427 1.5
R405 330
D401 ERB12-01
C418 220/35V
R466 68K
C459 0.01
C458 PT
R411 82K
R409 33K
R401 560
R413 27K
D402 WA5
R431 10K
C401 2.2/50V
R402 22K
R414 1.2
C414 1000/25V
R435 1K
Q431 2SA733 (BUFFER)
R436 100K
R470 PT
Q432 PT
R471 PT
R472 PT
R480 PT
R486 PT
R476 PT
R473 PT
Q433 PT
R477 PT
Q434 PT
R478 PT
R479 PT
R469 PT
R482 PT
R489 PT
R488 PT
R467 1500
R474 PT
R475 PT
R481 PT
R487 PT
R455 PT
DEFLECTION YOKE
P451 PT
1 V_OUTPUT
2 V_GND
Q581 2SA1321TPE6 (OVER CURRENT DETECTOR)
R584 2700
R581 1.5
R582 1.2
R583 PT
C571 10/50V
R545 1500
L721 PT
R721 PT
C721 PT
HOT_GND 3
+130V 4
P721 PT
1 DC_130V
2 N.C.
3 EW_MOD
4 H_GND

LINK TO VOLTAGE CHART

TV MAIN II SCHEMATIC DIAGRAM

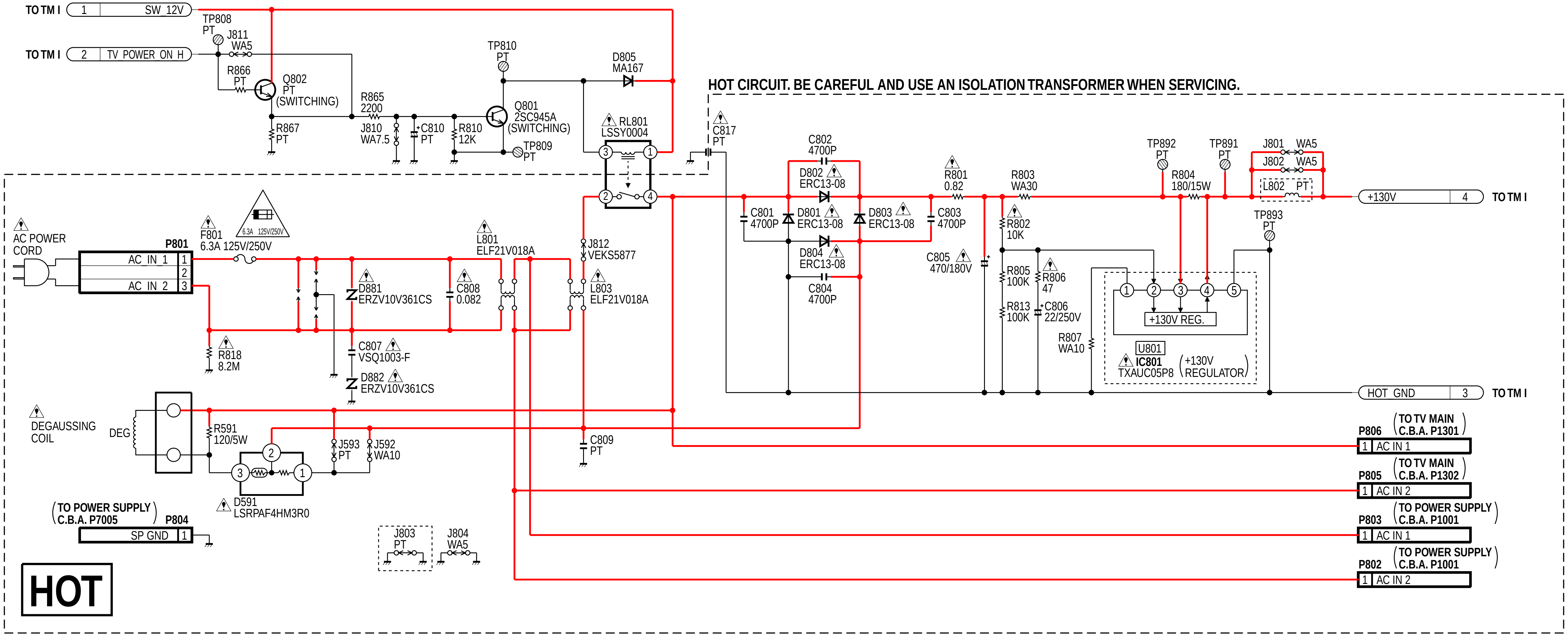
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

6.3A 125V/250V
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 6.3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 6.3A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.


TO TM I
1 SW 12V
TO TM I
2 TV POWER ON H
TP808 PT
J811 WA5
R866 PT
Q802 PT (SWITCHING)
R867 PT
R865 2200
J810 WA7.5
C810 PT
R810 12K
TP810 PT
Q801 2SC945A (SWITCHING)
TP809 PT
D805 MA167
RL801 LSSY0004
HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.
C817 PT
C802 4700P
D802 ERC13-08
C801 4700P
D801 ERC13-08
D803 ERC13-08
C803 4700P
D804 ERC13-08
C804 4700P
R801 0.82
R803 WA30
R802 10K
C805 470/180V
R805 100K
R806 47
R813 100K
C806 22/250V
R807 WA10
TP892 PT
TP891 PT
R804 180/15W
J801 WA5
J802 WA5
L802 PT
+130V 4
TO TM I
TP893 PT
+130V REG.
U801
IC801 TXAUC05P8
(+130V REGULATOR)
HOT GND 3
TO TM I
AC POWER CORD
P801
AC IN 1
AC IN 2
F801 6.3A 125V/250V
6.3A 125V/250V
D881 ERZV10V361CS
C808 0.082
L801 ELF21V018A
J812 VEKS5877
L803 ELF21V018A
R818 8.2M
C807 VSQ1003-F
D882 ERZV10V361CS
DEGAUSSING COIL
DEG
R591 120/5W
D591 LSRPAF4HM3R0
J593 PT
J592 WA10
C809 PT
(TO POWER SUPPLY C.B.A. P7005)
P804
SP GND
J803 PT
J804 WA5
HOT
P806 (TO TV MAIN C.B.A. P1301)
1 AC IN 1
P805 (TO TV MAIN C.B.A. P1302)
1 AC IN 2
P803 (TO POWER SUPPLY C.B.A. P1001)
1 AC IN 1
P802 (TO POWER SUPPLY C.B.A. P1001)
1 AC IN 2

LINK TO VOLTAGE CHART

TV MAIN III SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

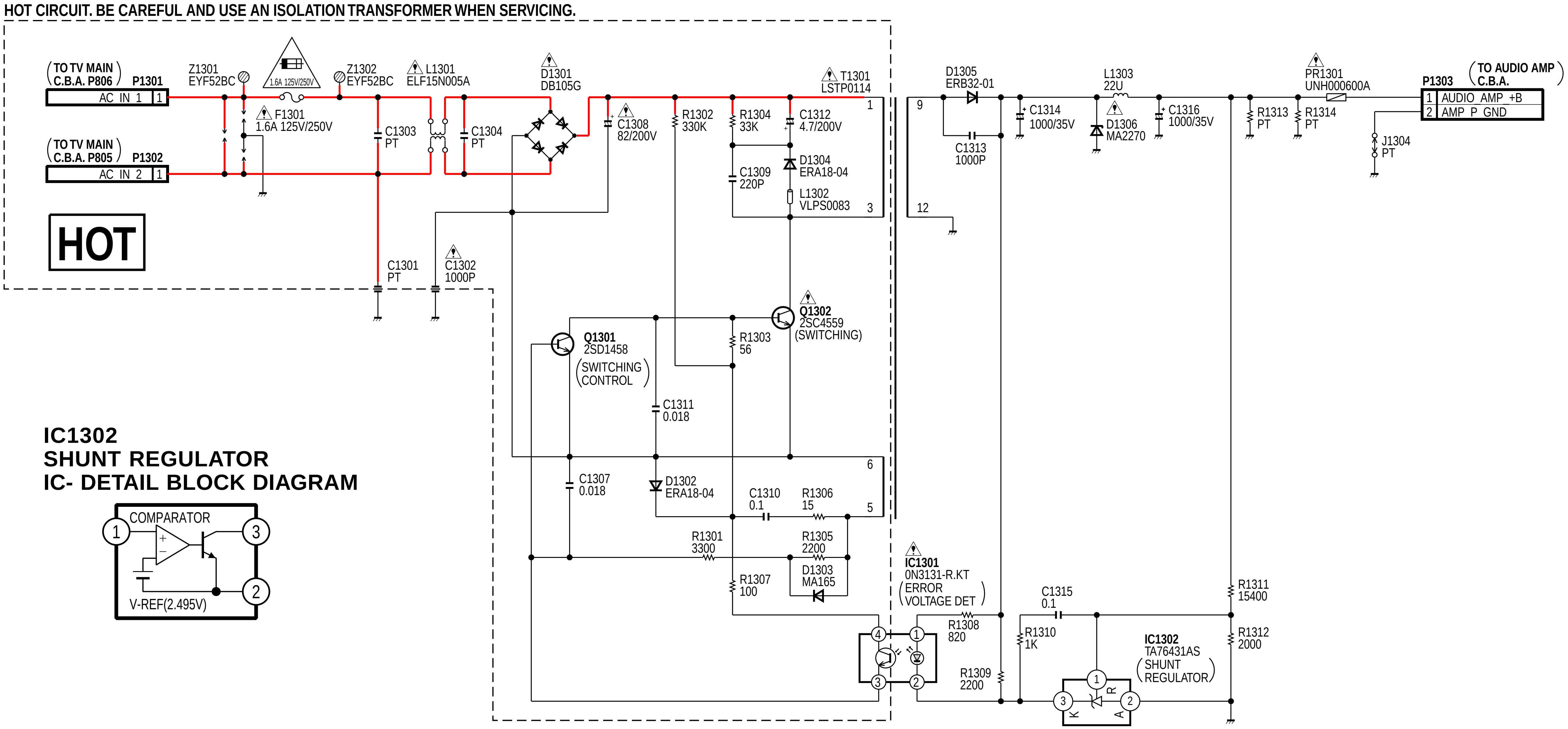
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V

1.6A 125/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.


HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.
(TO TV MAIN C.B.A. P806) P1301
AC IN 1
(TO TV MAIN C.B.A. P805) P1302
AC IN 2
HOT
Z1301 EYF52BC
1.6A 125V/250V
Z1302 EYF52BC
L1301 ELF15N005A
F1301 1.6A 125V/250V
C1303 PT
C1304 PT
D1301 DB105G
C1308 82/200V
R1302 330K
R1304 33K
C1312 4.7/200V
T1301 LSTP0114
D1304 ERA18-04
C1309 220P
L1302 VLPS0083
C1301 PT
C1302 1000P
Q1302 2SC4559 (SWITCHING)
Q1301 2SD1458 (SWITCHING CONTROL)
R1303 56
C1311 0.018
C1307 0.018
D1302 ERA18-04
C1310 0.1
R1306 15
R1301 3300
R1305 2200
R1307 100
D1303 MA165
1
3
6
5
9
12
D1305 ERB32-01
C1313 1000P
C1314 1000/35V
L1303 22U
D1306 MA2270
C1316 1000/35V
R1313 PT
R1314 PT
PR1301 UNH000600A
P1303 (TO AUDIO AMP C.B.A.)
1 AUDIO AMP +B
2 AMP P GND
J1304 PT
IC1301 0N3131-R.KT (ERROR VOLTAGE DET)
R1308 820
R1309 2200
C1315 0.1
R1310 1K
R1311 15400
R1312 2000
IC1302 TA76431AS (SHUNT REGULATOR)
1
2
3
4
R
K
A

IC1302 SHUNT REGULATOR IC- DETAIL BLOCK DIAGRAM

COMPARATOR
1
2
3
+
−
V-REF(2.495V)

LINK TO VOLTAGE CHART

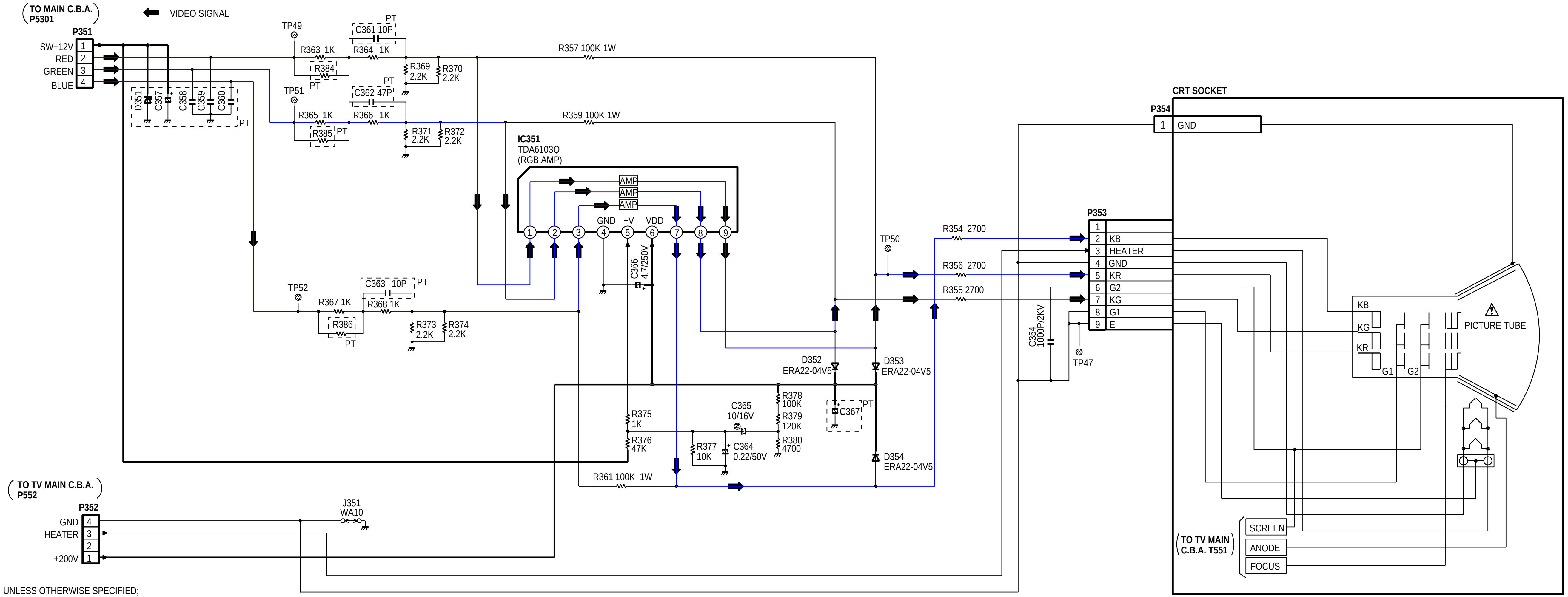
CRT SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



(TO MAIN C.B.A. P5301)
VIDEO SIGNAL
P351
SW+12V 1
RED 2
GREEN 3
BLUE 4
D351
C357
C358
C359
C360
PT
TP49
TP51
TP52
R363 1K
R364 1K
R384
C361 10P
R369 2.2K
R370 2.2K
R365 1K
R366 1K
R385
C362 47P
R371 2.2K
R372 2.2K
R367 1K
R368 1K
R386
C363 10P
R373 2.2K
R374 2.2K
R357 100K 1W
R359 100K 1W
IC351
TDA6103Q
(RGB AMP)
AMP
AMP
AMP
GND
+V
VDD
1
2
3
4
5
6
7
8
9
C366 4.7/250V
R375 1K
R376 47K
R377 10K
C365 10/16V
C364 0.22/50V
R378 100K
R379 120K
R380 4700
C367
D352 ERA22-04V5
D353 ERA22-04V5
D354 ERA22-04V5
R361 100K 1W
TP50
R354 2700
R356 2700
R355 2700
C354 1000P/2KV
TP47
P353
1
2 KB
3 HEATER
4 GND
5 KR
6 G2
7 KG
8 G1
9 E
CRT SOCKET
P354
1 GND
KB
KG
KR
G1
G2
PICTURE TUBE ⚠
SCREEN
ANODE
FOCUS
(TO TV MAIN C.B.A. T551)
(TO TV MAIN C.B.A. P552)
P352
GND 4
HEATER 3
2
+200V 1
J351
WA10

UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

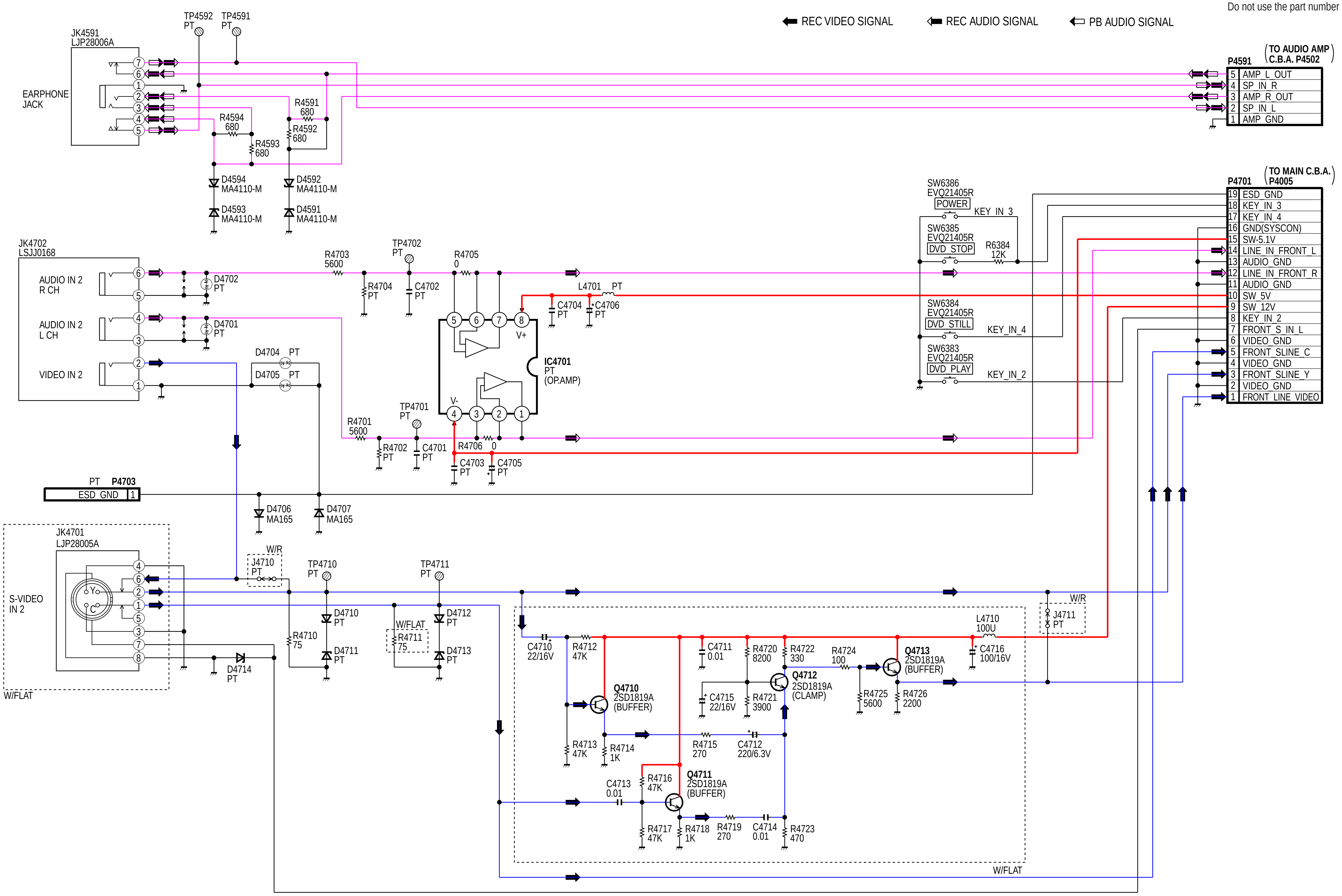
LINK TO VOLTAGE CHART

OPERATION SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
JK4591
LJP28006A
EARPHONE JACK
TP4592 PT
TP4591 PT
R4594 680
R4593 680
R4591 680
R4592 680
D4594 MA4110-M
D4593 MA4110-M
D4592 MA4110-M
D4591 MA4110-M
P4591
TO AUDIO AMP C.B.A. P4502
5 AMP_L_OUT
4 SP_IN_R
3 AMP_R_OUT
2 SP_IN_L
1 AMP_GND
JK4702
LSJJ0168
AUDIO IN 2 R CH
AUDIO IN 2 L CH
VIDEO IN 2
D4702 PT
D4701 PT
D4704 PT
D4705 PT
R4703 5600
R4704 PT
TP4702 PT
C4702 PT
R4705 0
L4701 PT
C4704 PT
C4706 PT
IC4701
PT
(OP.AMP)
V+
V-
TP4701 PT
R4701 5600
R4702 PT
C4701 PT
R4706 0
C4703 PT
C4705 PT
SW6386 EVQ21405R POWER
KEY_IN_3
SW6385 EVQ21405R DVD_STOP
R6384 12K
SW6384 EVQ21405R DVD_STILL
KEY_IN_4
SW6383 EVQ21405R DVD_PLAY
KEY_IN_2
P4701
TO MAIN C.B.A. P4005
19 ESD_GND
18 KEY_IN_3
17 KEY_IN_4
16 GND(SYSCON)
15 SW-5.1V
14 LINE_IN_FRONT_L
13 AUDIO_GND
12 LINE_IN_FRONT_R
11 AUDIO_GND
10 SW_5V
9 SW_12V
8 KEY_IN_2
7 FRONT_S_IN_L
6 VIDEO_GND
5 FRONT_SLINE_C
4 VIDEO_GND
3 FRONT_SLINE_Y
2 VIDEO_GND
1 FRONT_LINE_VIDEO
PT P4703
ESD_GND 1
D4706 MA165
D4707 MA165
JK4701
LJP28005A
S-VIDEO IN 2
W/FLAT
W/R
J4710 PT
TP4710 PT
TP4711 PT
R4710 75
W/FLAT
R4711 75
D4710 PT
D4711 PT
D4712 PT
D4713 PT
D4714 PT
C4710 22/16V
R4712 47K
Q4710 2SD1819A (BUFFER)
R4713 47K
R4714 1K
C4711 0.01
R4720 8200
R4722 330
R4724 100
Q4713 2SD1819A (BUFFER)
L4710 100U
C4716 100/16V
W/R
J4711 PT
C4715 22/16V
R4721 3900
Q4712 2SD1819A (CLAMP)
R4725 5600
R4726 2200
R4715 270
C4712 220/6.3V
C4713 0.01
R4716 47K
Q4711 2SD1819A (BUFFER)
R4717 47K
R4718 1K
R4719 270
C4714 0.01
R4723 470
W/FLAT

LSJB2069
PV-DF2002
OPERATION SCHEMATIC DIAGRAM

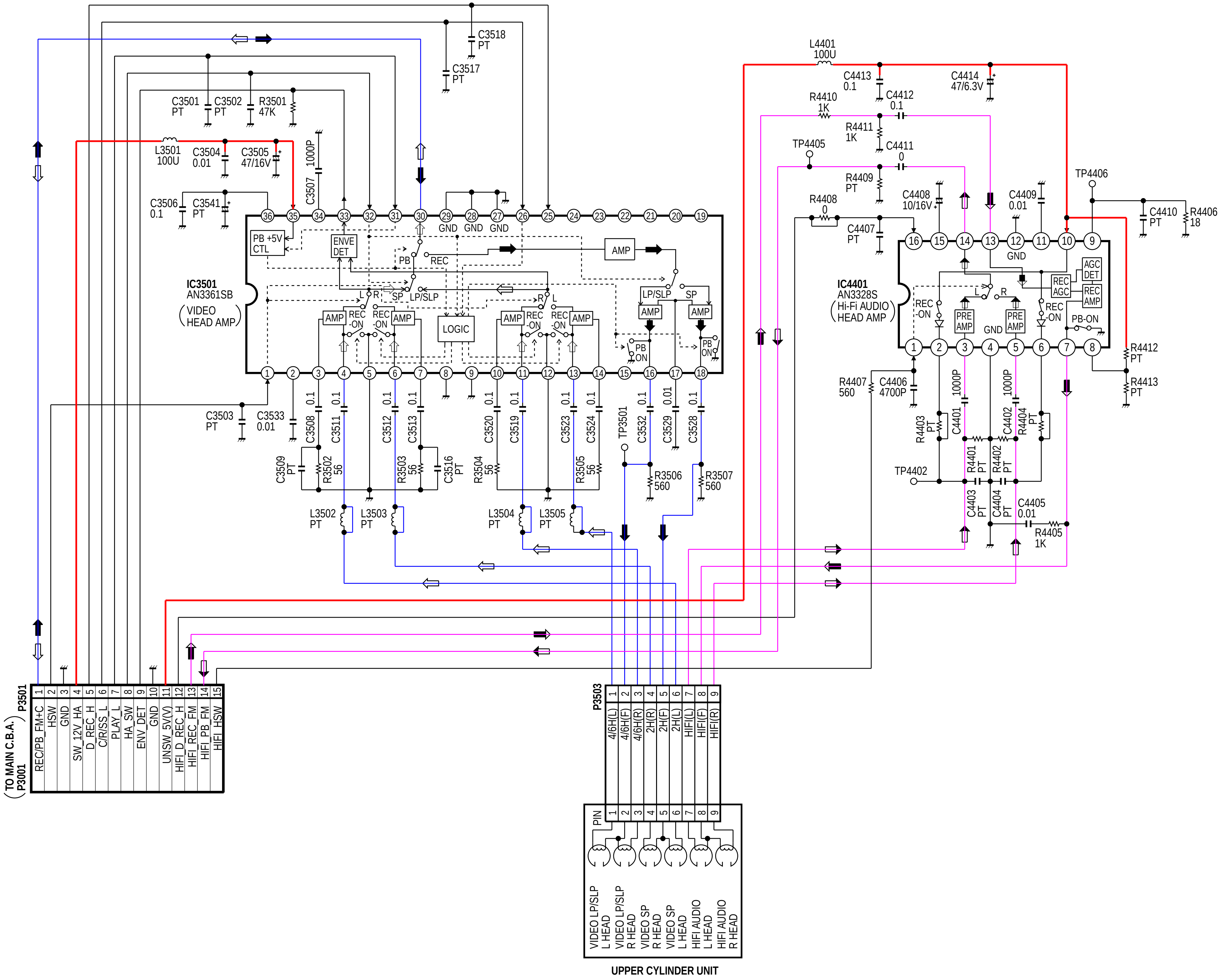
Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

⬅ REC VIDEO SIGNAL
⇦ PB VIDEO SIGNAL
⬅ REC AUDIO SIGNAL
⇦ PB AUDIO SIGNAL



IC3501
AN3361SB
(VIDEO HEAD AMP)
PB +5V CTL
ENVE DET
PB
REC
AMP
LP/SLP
SP
LOGIC
REC -ON
PB ON
GND
C3518 PT
C3517 PT
C3501 PT
C3502 PT
R3501 47K
L3501 100U
C3504 0.01
C3505 47/16V
C3507 1000P
C3506 0.1
C3541 PT
C3503 PT
C3533 0.01
C3508 0.1
C3511 0.1
C3512 0.1
C3513 0.1
C3520 0.1
C3519 0.1
C3523 0.1
C3524 0.1
C3532 0.1
C3529 0.01
C3528 0.1
C3509 PT
R3502 56
R3503 56
C3516 PT
R3504 56
R3505 56
TP3501
R3506 560
R3507 560
L3502 PT
L3503 PT
L3504 PT
L3505 PT
IC4401
AN3328S
(Hi-Fi AUDIO HEAD AMP)
REC AGC
AGC DET
REC AMP
PRE AMP
REC -ON
PB-ON
L4401 100U
C4413 0.1
C4414 47/6.3V
R4410 1K
C4412 0.1
R4411 1K
TP4405
C4411 0
R4409 PT
R4408 0
C4408 10/16V
C4409 0.01
C4407 PT
TP4406
C4410 PT
R4406 18
R4412 PT
R4413 PT
R4407 560
C4406 4700P
C4401 1000P
C4402 1000P
R4403 PT
R4404 PT
R4401 PT
R4402 PT
TP4402
C4403 PT
C4404 PT
C4405 0.01
R4405 1K
P3501
(TO MAIN C.B.A. P3001)
1 REC/PB_FM+C
2 HSW
3 GND
4 SW_12V_HA
5 D_REC_H
6 C/R/SS_L
7 PLAY_L
8 HA_SW
9 ENV_DET
10 GND
11 UNSW_5V(V)
12 HIFI_D_REC_H
13 HIFI_REC_FM
14 HIFI_PB_FM
15 HIFI_HSW
P3502
1 4/6H(L)
2 4/6H(F)
3 4/6H(R)
4 2H(R)
5 2H(F)
6 2H(L)
7 HIFI(L)
8 HIFI(F)
9 HIFI(R)
PIN
VIDEO LP/SLP L HEAD
VIDEO LP/SLP R HEAD
VIDEO SP R HEAD
VIDEO SP L HEAD
HIFI AUDIO L HEAD
HIFI AUDIO R HEAD
UPPER CYLINDER UNIT

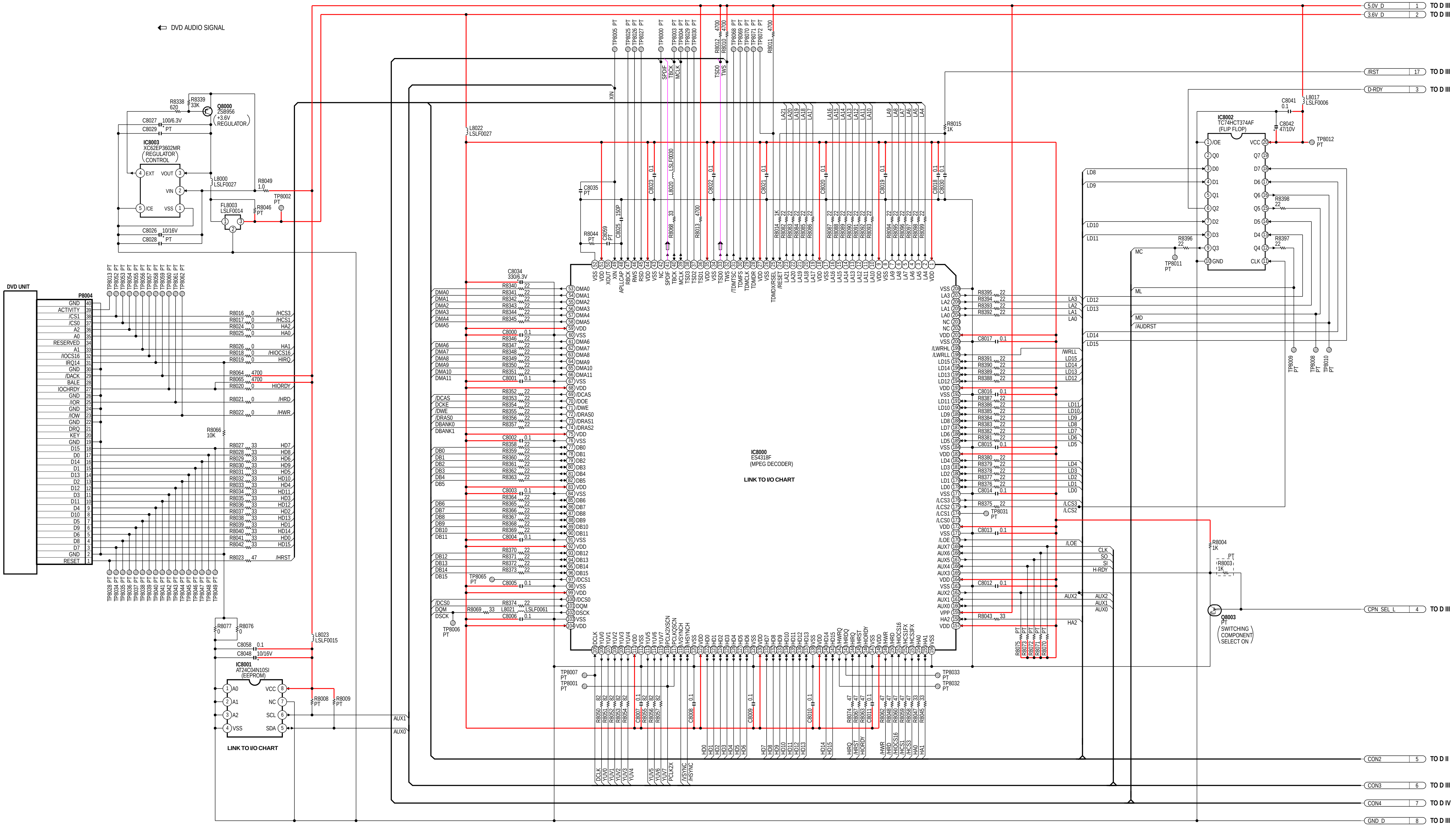
LINK TO VOLTAGE CHART

DVD DECODER I SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.


DVD AUDIO SIGNAL
DVD UNIT
P8004
Q8000
2SB956
+3.6V
REGULATOR
IC8003
XC62EP3602MR
REGULATOR CONTROL
IC8000
ES4318F
(MPEG DECODER)
LINK TO I/O CHART
IC8001
AT24C04N10SI
(EEPROM)
LINK TO I/O CHART
IC8002
TC74HCT374AF
(FLIP FLOP)
Q8003
SWITCHING COMPONENT SELECT ON
5.0V_D
3.6V_D
/RST
D-RDY
CPN_SEL_L
CON2
CON3
CON4
GND_D
TO D III
TO D II
TO D IV
AUX1
AUX0

LINK TO VOLTAGE CHART

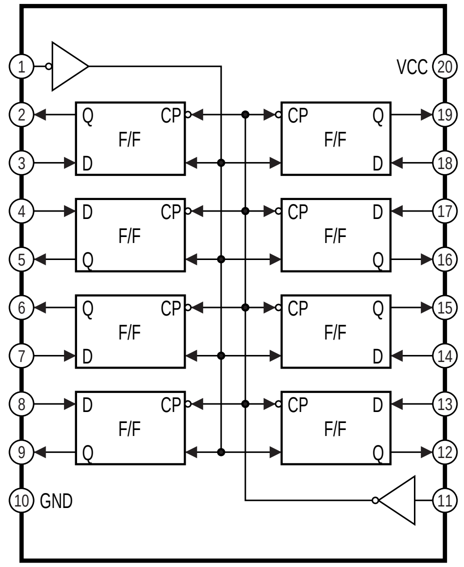
I/O CHART OF IC8000

Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	O	LA4	Memory address 4
3	O	LA5	Memory address 5
4	O	LA6	Memory address 6
5	O	LA7	Memory address 7
6	O	LA8	Memory address 8
7	O	LA9	Memory address 9
8	-	VSS	Ground
9	I	VDD	+3.6V
10	O	LA10	Memory address 10
11	O	LA11	Memory address 11
12	O	LA12	Memory address 12
13	O	LA13	Memory address 13
14	O	LA14	Memory address 14
15	O	LA15	Memory address 15
16	O	LA16	Memory address 16
17	-	VSS	Ground
18	I	VDD	+3.6V
19	O	LA17	Memory address 17
20	O	LA18	Memory address 18
21	O	LA19	Memory address 19
22	O	LA20	Memory address 20
23	O	LA21	Memory address 21
24	I	/RESET	Reset : low
25	-	TDMDX/RSEL	(Not used)
26	-	VSS	Ground
27	I	VDD	+3.6V
28	-	TDMDR	(Not used)
29	-	TDMCLK	(Not used)
30	-	TDMFS	(Not used)
31	-	/TDMTSC	(Not used)
32	O	TWS	Audio transmit frame sync
33	O	TSD0	Audio serial data
34	-	VSS	Ground
35	I	VDD	+3.6V
36	-	TSD1	(Not used)
37	-	TSD2	(Not used)
38	-	TSD3	(Not used)
39	I/O	MCLK	Audio master clock
40	I/O	TBCK	Audio transmit bit clock
41	O	SPDIF	IEC958 audio data
42	-	NC	(Not used)
43	-	VSS	Ground
44	I	VDD	+3.6V
45	-	RSD	(Not used)
46	-	RWS	(Not used)
47	-	RBCK	(Not used)
48	-	APLLCAP	(Not used)
49	I	XIN	27MHz clock
50	-	XOUT	(Not used)
51	I	VDD	+3.6V
52	-	VSS	Ground
53	O	DMA0	SDRAM address 0
54	O	DMA1	SDRAM address 1
55	O	DMA2	SDRAM address 2
56	O	DMA3	SDRAM address 3
57	O	DMA4	SDRAM address 4
58	O	DMA5	SDRAM address 5
59	I	VDD	+3.6V
60	-	VSS	Ground
61	O	DMA6	SDRAM address 6
62	O	DMA7	SDRAM address 7
63	O	DMA8	SDRAM address 8
64	O	DMA9	SDRAM address 9
65	O	DMA10	SDRAM address 10
66	O	DMA11	SDRAM address 11
67	-	VSS	Ground
68	I	VDD	+3.6V
69	O	/DCAS	Column address strobe : low
70	-	/DOE	(Not used)
71	O	/DWE	Write enable : low
72	O	/DRAS0	Row address strobe : low
73	-	/DRAS1	(Not used)
74	-	/DRAS2	(Not used)
75	I	VDD	+3.6V
76	-	VSS	Ground
77	I/O	DB0	SDRAM data 0
78	I/O	DB1	SDRAM data 1
79	I/O	DB2	SDRAM data 2
80	I/O	DB3	SDRAM data 3
81	I/O	DB4	SDRAM data 4
82	I/O	DB5	SDRAM data 5
83	I	VDD	+3.6V
84	-	VSS	Ground
85	I/O	DB6	SDRAM data 6
86	I/O	DB7	SDRAM data 7
87	I/O	DB8	SDRAM data 8
88	I/O	DB9	SDRAM data 9
89	I/O	DB10	SDRAM data 10
90	I/O	DB11	SDRAM data 11
91	-	VSS	Ground
92	I	VDD	+3.6V
93	I/O	DB12	SDRAM data 12
94	I/O	DB13	SDRAM data 13
95	I/O	DB14	SDRAM data 14
96	I/O	DB15	SDRAM data 15
97	O	/DCS1	SDRAM chip select : low
98	-	VSS	Ground
99	I	VDD	+3.6V
100	O	/DCS0	SDRAM chip select : low
101	O	DQM	Data input/output mask
102	O	DSCK	SDRAM clock
103	-	VSS	Ground
104	I	VDD	+3.6V
105	I	DCLK	27MHz clock
106	O	YUV0	YUV data 0
107	O	YUV1	YUV data 1
108	O	YUV2	YUV data 2
109	O	YUV3	YUV data 3
110	O	YUV4	YUV data 4
111	I	VDD	+3.6V
112	-	VSS	Ground
113	I	YUV5	YUV data 5
114	I	YUV6	YUV data 6
115	I	YUV7	YUV data 7
116	I	PCLK2XSCN	2X pixel clock
117	I/O	PCLKQSCN	pixel clock
118	I/O	/VSYNCH	V-sync signal
119	I/O	/HSYNCH	V-sync signal
120	-	VSS	Ground
121	I	VDD	+3.6V
122	I/O	HD0	Host data 0
123	I/O	HD1	Host data 1
124	I/O	HD2	Host data 2
125	I/O	HD3	Host data 3
126	I/O	HD4	Host data 4
127	I/O	HD5	Host data 5
128	I/O	HD6	Host data 6
129	-	VSS	Ground
130	I	VDD	+3.6V
131	I/O	HD7	Host data 7
132	I/O	HD8	Host data 8
133	I/O	HD9	Host data 9
134	I/O	HD10	Host data 10
135	I/O	HD11	Host data 11
136	I/O	HD12	Host data 12
137	I/O	HD13	Host data 13
138	-	VSS	Ground
139	I	VDD	+3.6V
140	I/O	HD14	Host data 14
141	I/O	HD15	Host data 15
142	-	/HWRQ	(Not used)
143	-	/HRDQ	(Not used)
144	I/O	HIRQ	Host interrupt
145	I	/HRST	Host reset : low
146	I	HIORDY	Host I/O ready
147	-	VSS	Ground
148	I	VDD	+3.6V
149	O	/HWR	Host write request : low
150	I	/HRD	Host read request : low
151	I	/HIOCS16	Device 16-bit data transfer
152	O	/HCS1FX	Host select 1
153	O	/HCS3FX	Host select 3
154	I/O	HA0	Host address 0
155	I/O	HA1	Host address 1
156	-	VSS	Ground
157	I	VDD	+3.6V
158	I/O	HA2	Host address 2
159	I	VPP	Peripheral protection voltage
160	I/O	AUX0	I2C serial data
161	I	AUX1	I2C serial clock
162	O	AUX2	DVD ready (Busy : low)
163	-	VSS	Ground
164	I	VDD	+3.6V
165	-	AUX3	(Not used)
166	I	AUX4	DVD chip select : low
167	O	AUX5	Serial data 1
168	I	AUX6	Serial data 0
169	I	AUX7	Serial clock
170	O	/LOE	Output enable : low
171	-	VSS	Ground
172	I	VDD	+3.6V
173	-	/LCS0	(Not used)
174	-	/LCS1	(Not used)
175	O	/LCS2	Clock
176	O	/LCS3	Memory chip select : low
177	-	VSS	Ground
178	I/O	LD0	Memory data 0
179	I/O	LD1	Memory data 1
180	I/O	LD2	Memory data 2
181	I/O	LD3	Memory data 3
182	I/O	LD4	Memory data 4
183	I	VDD	+3.6V
184	-	VSS	Ground
185	I/O	LD5	Memory data 5
186	I/O	LD6	Memory data 6
187	I/O	LD7	Memory data 7
188	I/O	LD8	Memory data 8
189	I/O	LD9	Memory data 9
190	I/O	LD10	Memory data 10
191	I/O	LD11	Memory data 11
192	-	VSS	Ground
193	I	VDD	+3.6V
194	I/O	LD12	Memory data 12
195	I/O	LD13	Memory data 13
196	I/O	LD14	Memory data 14
197	I/O	LD15	Memory data 15
198	O	/LWRLL	Write enable : low
199	-	/LWRHL	(Not used)
200	-	VSS	Ground
201	I	VDD	+3.6V
202	-	NC	(Not used)
203	-	NC	(Not used)
204	O	LA0	Memory address 0
205	O	LA1	Memory address 1
206	O	LA2	Memory address 2
207	O	LA3	Memory address 3
208	-	VSS	Ground

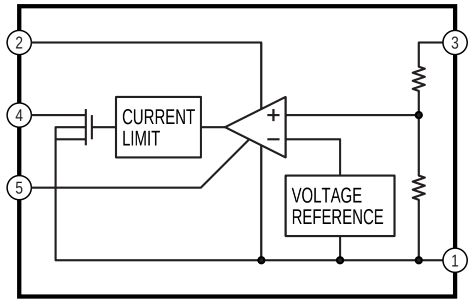
I/O CHART OF IC8001

Pin No.	I/O	Signal Name	Description
1	-	A0	(Not used)
2	-	A1	(Not used)
3	-	A2	(Not used)
4	-	VSS	Ground
5	I/O	SDA	I2C Serial data
6	O	SCL	I2C Serial clock
7	-	NC	(Not used)
8	I	VCC	+5.0V

IC8002 FLIP FLOP IC-DETAIL BLOCK DIAGRAM



IC8003 REGULATOR CONTROL IC-DETAIL BLOCK DIAGRAM

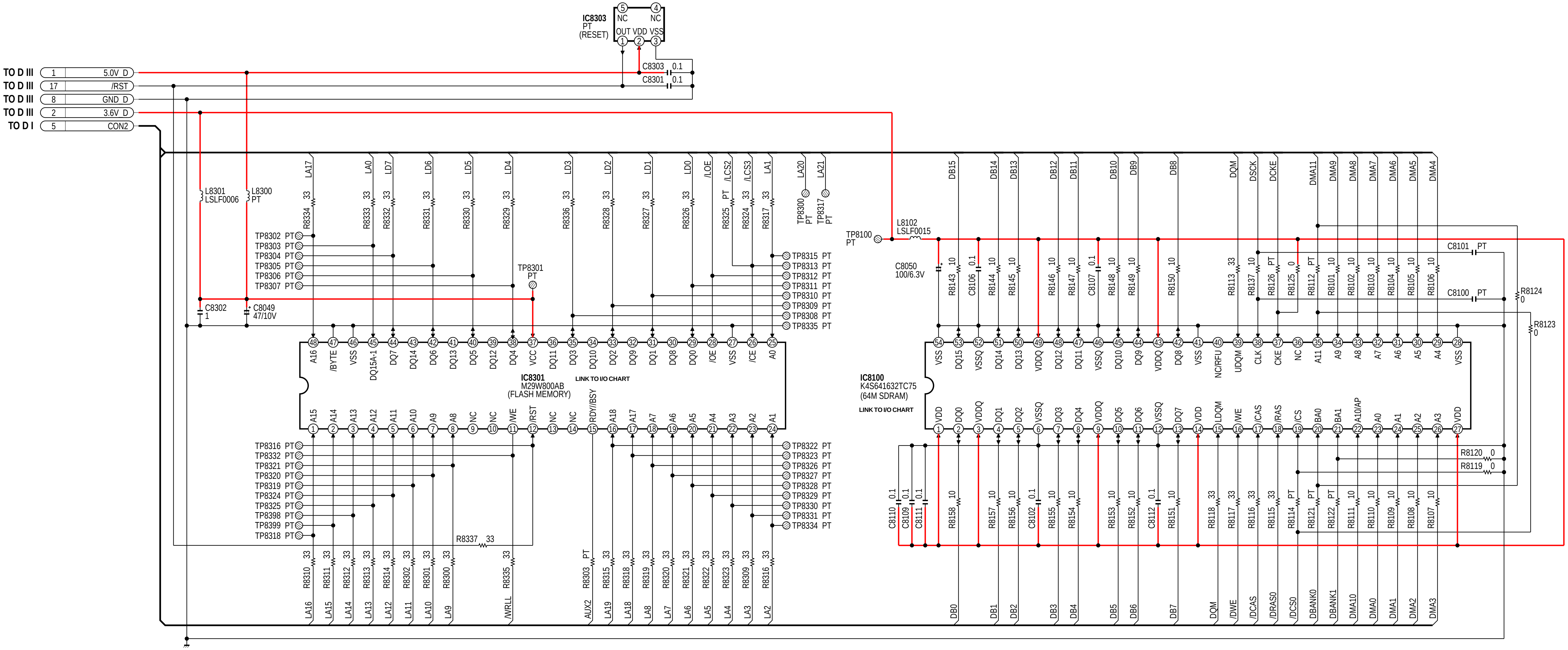


DVD DECODER II SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



IC8303
PT
(RESET)
NC
OUT VDD VSS
C8303 0.1
C8301 0.1
TO D III 1 5.0V_D
TO D III 17 /RST
TO D III 8 GND_D
TO D III 2 3.6V_D
TO D I 5 CON2
L8301 LSLF0006
L8300 PT
C8302 1
C8049 47/10V
TP8301 PT
IC8301
M29W800AB
(FLASH MEMORY)
LINK TO I/O CHART
A16 /BYTE VSS DQ15A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 /OE VSS /CE A0
A15 A14 A13 A12 A11 A10 A9 A8 NC NC /WE /RST NC NC RDY//BSY A18 A17 A7 A6 A5 A4 A3 A2 A1
LA17 LA0 LD7 LD6 LD5 LD4 LD3 LD2 LD1 LD0 /LOE /LCS2 /LCS3 LA1 LA20 LA21
LA16 LA15 LA14 LA13 LA12 LA11 LA10 LA9 /WRLL AUX2 LA19 LA18 LA8 LA7 LA6 LA5 LA4 LA3 LA2
R8337 33
TP8100 PT
L8102 LSLF0015
C8050 100/6.3V
IC8100
K4S641632TC75
(64M SDRAM)
LINK TO I/O CHART
VSS DQ15 VSSQ DQ14 DQ13 VDDQ DQ12 DQ11 VSSQ DQ10 DQ9 VDDQ DQ8 VSS NC/RFU UDQM CLK CKE NC A11 A9 A8 A7 A6 A5 A4 VSS
VDD DQ0 VDDQ DQ1 DQ2 VSSQ DQ3 DQ4 VDDQ DQ5 DQ6 VSSQ DQ7 VDD LDQM /WE /CAS /RAS /CS BA0 BA1 A10/AP A0 A1 A2 A3 VDD
DB15 DB14 DB13 DB12 DB11 DB10 DB9 DB8 DQM DSCK DCKE DMA11 DMA9 DMA8 DMA7 DMA6 DMA5 DMA4
DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 DQM /DWE /DCAS /DRAS0 /DCS0 DBANK0 DBANK1 DMA10 DMA0 DMA1 DMA2 DMA3
C8101 PT
C8100 PT
R8124 0
R8123 0
R8120 0
R8119 0

LINK TO VOLTAGE CHART

LSJB2007
PV-DF2002
DVD DECODER II SCHEMATIC DIAGRAM

I/O CHART OF IC8301

Pin No.	I/O	Signal Name	Description
1	I	A15	Memory address 16
2	I	A14	Memory address 15
3	I	A13	Memory address 14
4	I	A12	Memory address 13
5	I	A11	Memory address 12
6	I	A10	Memory address 11
7	I	A9	Memory address 10
8	I	A8	Memory address 9
9	-	NC	(Not used)
10	-	NC	(Not used)
11	I	/WE	Write enable : low
12	I	/RST	Reset : low
13	-	NC	(Not used)
14	-	NC	(Not used)
15	I	RDY/BSY	DVD Ready (Busy : low)
16	I	A18	Memory address 19
17	I	A17	Memory address 18
18	I	A7	Memory address 8
19	I	A6	Memory address 7
20	I	A5	Memory address 6
21	I	A4	Memory address 5
22	I	A3	Memory address 4
23	I	A2	Memory address 3
24	I	A1	Memory address 2
25	I	A0	Memory address 1
26	I	/CE	Memory chip select : low
27	-	VSS	Ground
28	I	/OE	Output enable : low
29	I/O	DQ0	Memory data 0
30	I/O	DQ8	Memory data 8
31	I/O	DQ1	Memory data 1
32	I/O	DQ9	Memory data 9
33	I/O	DQ2	Memory data 2
34	I/O	DQ10	Memory data 10
35	I/O	DQ3	Memory data 3
36	I/O	DQ11	Memory data 11
37	I	VCC	+5.0V
38	I/O	DQ4	Memory data 4
39	I/O	DQ12	Memory data 12
40	I/O	DQ5	Memory data 5
41	I/O	DQ13	Memory data 13
42	I/O	DQ6	Memory data 6
43	I/O	DQ14	Memory data 14
44	I/O	DQ7	Memory data 7
45	I/O	DQ15A-1	Memory address 0
46	-	VSS	Ground
47	-	/BYTE	Ground
48	I	A16	Memory address 16

I/O CHART OF IC8100

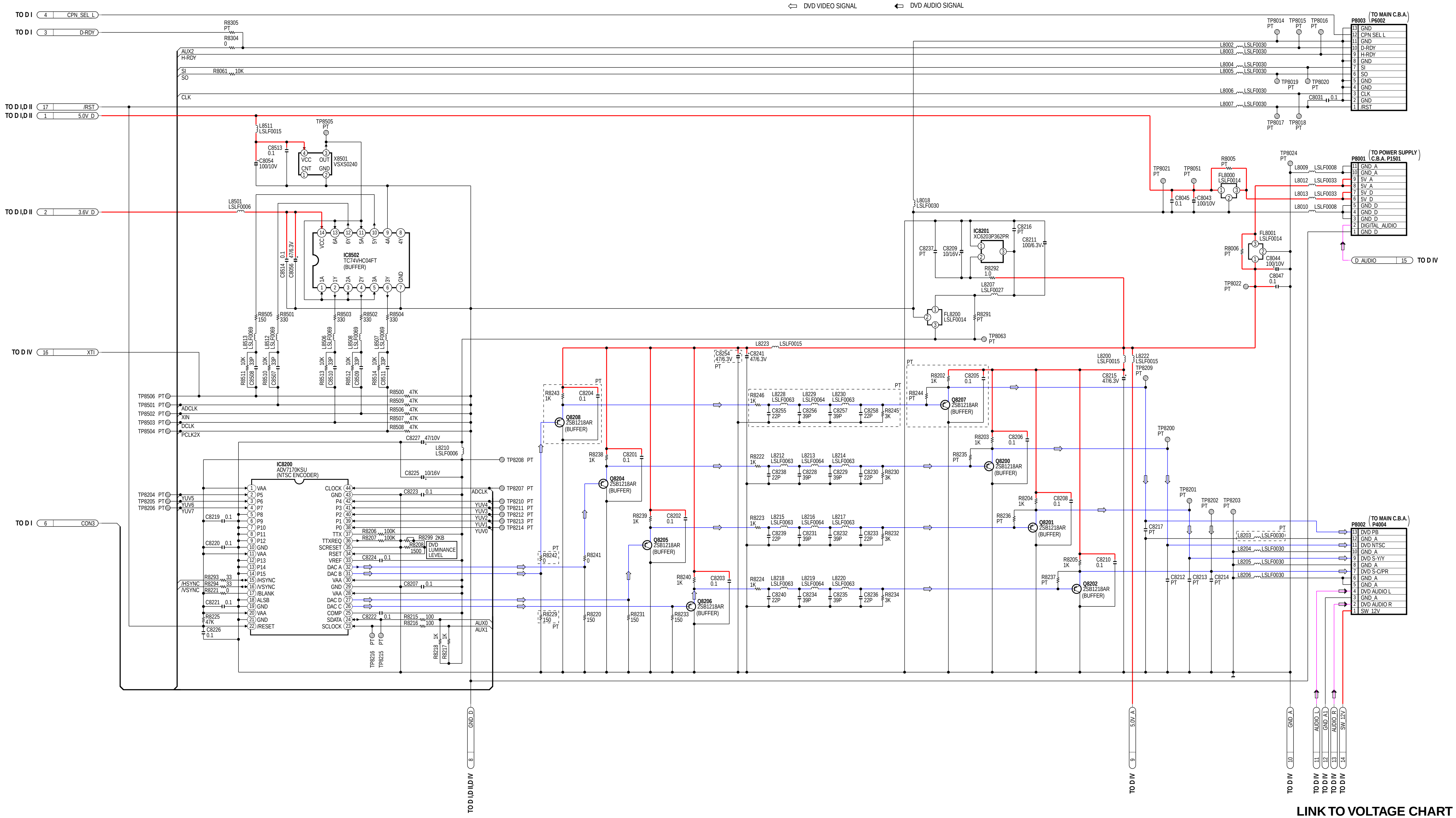
Pin No.	I/O	Signal Name	Description
1	I	VDD	+3.6V
2	I/O	DQ0	SDRAM data 7
3	I	VDDQ	+3.6V
4	I/O	DQ1	SDRAM data 6
5	I/O	DQ2	SDRAM data 5
6	-	VSSQ	Ground
7	I/O	DQ3	SDRAM data 4
8	I/O	DQ4	SDRAM data 3
9	I	VDDQ	+3.6V
10	I/O	DQ5	SDRAM data 2
11	I/O	DQ6	SDRAM data 1
12	-	VSSQ	Ground
13	I/O	DQ7	SDRAM data 0
14	I	VDD	+3.6V
15	I	LDQM	Data input/output mask
16	I	/WE	Write enable : low
17	I	/CAS	Column address strobe : low
18	I	/RAS	Row address strobe : low
19	I	/CS	SDRAM chip select : low
20	I	BA0	(Not used)
21	I	BA1	(Not used)
22	I	A10	SDRAM address 10
23	I	A0	SDRAM address 0
24	I	A1	SDRAM address 1
25	I	A2	SDRAM address 2
26	I	A3	SDRAM address 3
27	I	VDD	+3.6V
28	-	VSS	Ground
29	I	A4	SDRAM address 4
30	I	A5	SDRAM address 5
31	I	A6	SDRAM address 6
32	I	A7	SDRAM address 7
33	I	A8	SDRAM address 8
34	I	A9	SDRAM address 9
35	I	A11	SDRAM address 11
36	-	NC	(Not used)
37	-	CKE	(Not used)
38	I	CLK	SDRAM clock
39	I	UDQM	Data input/output mask
40	-	NC	(Not used)
41	-	VSS	Ground
42	I/O	DQ8	SDRAM data 8
43	I	VDDQ	+3.6V
44	I/O	DQ9	SDRAM data 9
45	I/O	DQ10	SDRAM data 10
46	-	VSSQ	Ground
47	I/O	DQ11	SDRAM data 11
48	I/O	DQ12	SDRAM data 12
49	I	VDDQ	+3.6V
50	I/O	DQ13	SDRAM data 13
51	I/O	DQ14	SDRAM data 14
52	-	VSSQ	Ground
53	I/O	DQ15	SDRAM data 15
54	-	VSS	Ground

DVD DECODER III SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

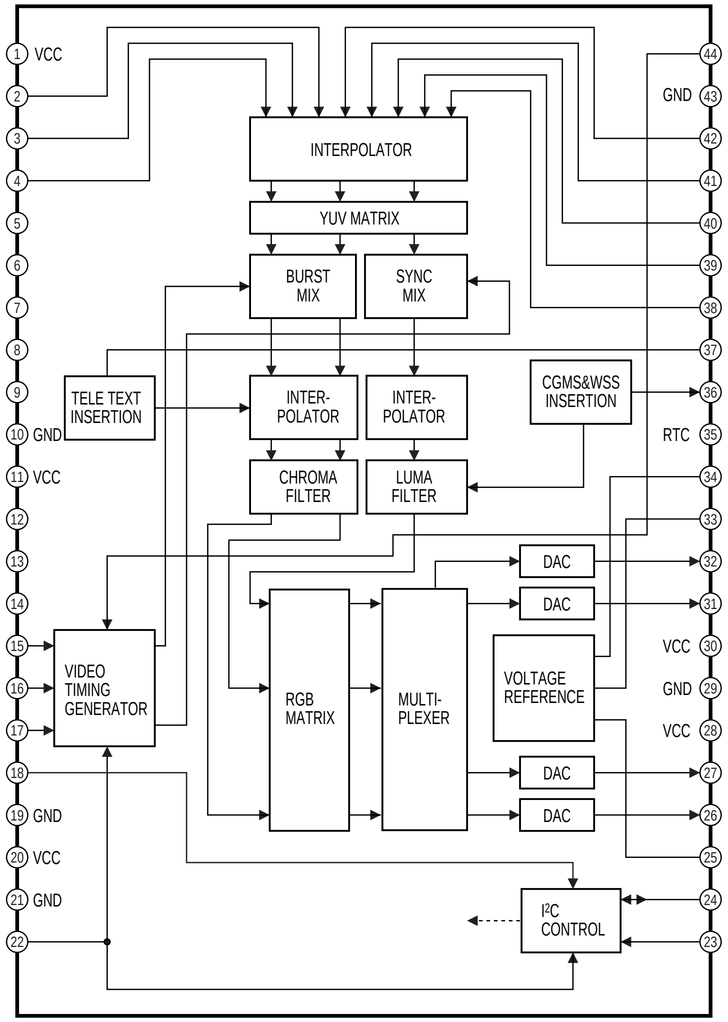
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

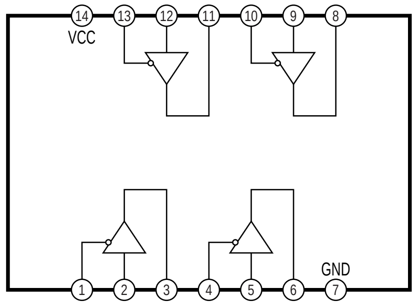

DVD VIDEO SIGNAL
DVD AUDIO SIGNAL
TO D I 4 CPN_SEL_L
TO D I 3 D-RDY
TO D I,D II 17 /RST
TO D I,D II 1 5.0V_D
TO D I,D II 2 3.6V_D
TO D IV 16 XTI
TO D I 6 CON3
TO MAIN C.B.A. P8003 P6002
13 GND
12 CPN SEL L
11 GND
10 D-RDY
9 H-RDY
8 GND
7 SI
6 SO
5 GND
4 GND
3 CLK
2 GND
1 /RST
TO POWER SUPPLY C.B.A. P1501 P8001
11 GND_A
10 GND_A
9 5V_A
8 5V_A
7 5V_D
6 5V_D
5 GND_D
4 GND_D
3 GND_D
2 DIGITAL_AUDIO
1 GND_D
D_AUDIO 15 TO D IV
TO MAIN C.B.A. P8002 P4004
13 DVD PB
12 GND_A
11 DVD NTSC
10 GND_A
9 DVD S-Y/Y
8 GND_A
7 DVD S-C/PR
6 GND_A
5 GND_A
4 DVD AUDIO L
3 GND_A
2 DVD AUDIO R
1 SW_12V
X8501 VSXS0240
IC8502 TC74VHC04FT (BUFFER)
IC8200 ADV7170KSU (NTSC ENCODER)
IC8201 XC6203P362PR
Q8200 2SB1218AR (BUFFER)
Q8201 2SB1218AR (BUFFER)
Q8202 2SB1218AR (BUFFER)
Q8204 2SB1218AR (BUFFER)
Q8205 2SB1218AR (BUFFER)
Q8206 2SB1218AR (BUFFER)
Q8207 2SB1218AR (BUFFER)
Q8208 2SB1218AR (BUFFER)
FL8000 LSLF0014
FL8001 LSLF0014
FL8200 LSLF0014
R8208 1500 DVD LUMINANCE LEVEL
AUX2
H-RDY
SI
SO
CLK
ADCLK
XIN
DCLK
PCLK2X
YUV5
YUV6
YUV7
/HSYNC
/VSYNC
AUX0
AUX1
GND_D 8 TO D I,D II,D IV
5.0V_A 9 TO D IV
GND_A 10 TO D IV
AUDIO_L 11 TO D IV
GND_A1 12 TO D IV
AUDIO_R 13 TO D IV
SW_12V 14 TO D IV

LINK TO VOLTAGE CHART

IC8200 NTSC ENCODER IC-DETAIL BLOCK DIAGRAM


1 VCC
2
3
4
5
6
7
8
9
10 GND
11 VCC
12
13
14
15
16
17
18
19 GND
20 VCC
21 GND
22
44
43 GND
42
41
40
39
38
37
36
35 RTC
34
33
32
31
30 VCC
29 GND
28 VCC
27
26
25
24
23
INTERPOLATOR
YUV MATRIX
BURST MIX
SYNC MIX
TELE TEXT INSERTION
INTER-POLATOR
INTER-POLATOR
CGMS&WSS INSERTION
CHROMA FILTER
LUMA FILTER
DAC
DAC
VIDEO TIMING GENERATOR
RGB MATRIX
MULTI-PLEXER
VOLTAGE REFERENCE
DAC
DAC
I²C CONTROL

IC8502 BUFFER IC-DETAIL BLOCK DIAGRAM


14
13
12
11
10
9
8
VCC
1
2
3
4
5
6
7
GND

DVD DECODER IV SCHEMATIC DIAGRAM

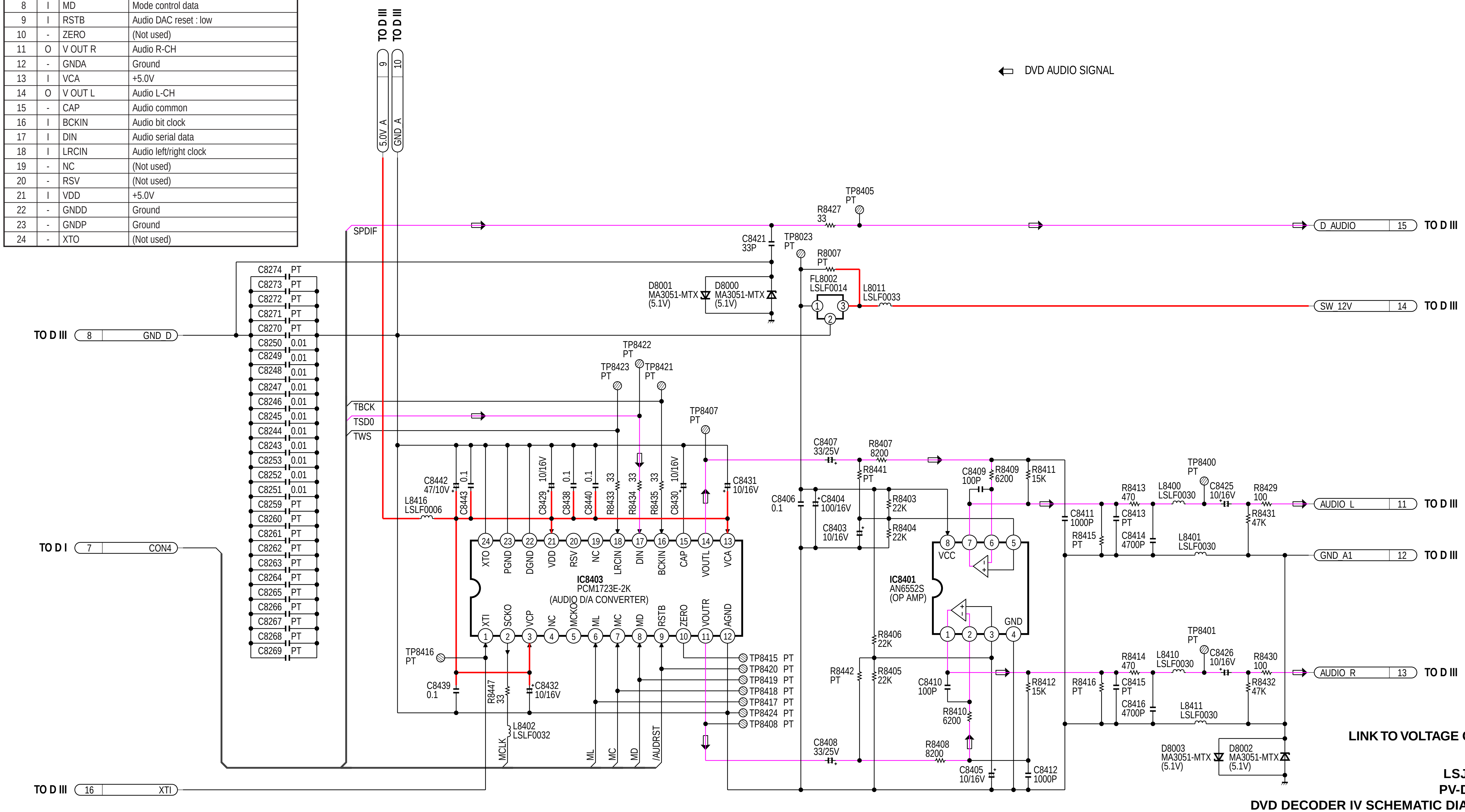
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

I/O CHART OF IC8403

Pin No.	I/O	Signal Name	Description
1	I	XTI	27MHz clock
2	O	SCKO	System clock
3	I	VCP	+5.0V
4	-	NC	(Not used)
5	-	MCKO	(Not used)
6	I	ML	Mode control latch
7	I	MC	Mode control clock
8	I	MD	Mode control data
9	I	RSTB	Audio DAC reset : low
10	-	ZERO	(Not used)
11	O	V OUT R	Audio R-CH
12	-	GNDA	Ground
13	I	VCA	+5.0V
14	O	V OUT L	Audio L-CH
15	-	CAP	Audio common
16	I	BCKIN	Audio bit clock
17	I	DIN	Audio serial data
18	I	LRCIN	Audio left/right clock
19	-	NC	(Not used)
20	-	RSV	(Not used)
21	I	VDD	+5.0V
22	-	GNDD	Ground
23	-	GNDP	Ground
24	-	XTO	(Not used)



TO D III
TO D III
9
10
5.0V A
GND A
DVD AUDIO SIGNAL
SPDIF
TBCK
TSD0
TWS
TO D III
8
GND D
TO D I
7
CON4
TO D III
16
XTI
C8274 PT
C8273 PT
C8272 PT
C8271 PT
C8270 PT
C8250 0.01
C8249 0.01
C8248 0.01
C8247 0.01
C8246 0.01
C8245 0.01
C8244 0.01
C8243 0.01
C8253 0.01
C8252 0.01
C8251 0.01
C8259 PT
C8260 PT
C8261 PT
C8262 PT
C8263 PT
C8264 PT
C8265 PT
C8266 PT
C8267 PT
C8268 PT
C8269 PT
TP8405 PT
R8427 33
C8421 33P
TP8023 PT
R8007 PT
D8001 MA3051-MTX (5.1V)
D8000 MA3051-MTX (5.1V)
FL8002 LSLF0014
L8011 LSLF0033
D AUDIO 15
TO D III
SW 12V 14
TO D III
TP8422 PT
TP8423 PT
TP8421 PT
TP8407 PT
C8442 47/10V
C8443 0.1
L8416 LSLF0006
C8429 10/16V
C8438 0.1
C8440 0.1
R8433 33
R8434 33
R8435 33
C8430 10/16V
C8431 10/16V
IC8403
PCM1723E-2K
(AUDIO D/A CONVERTER)
XTO PGND DGND VDD RSV NC LRCIN DIN BCKIN CAP VOUTL VCA
XTI SCKO VCP NC MCKO ML MC MD RSTB ZERO VOUTR AGND
TP8416 PT
C8439 0.1
R8447 33
C8432 10/16V
L8402 LSLF0032
MCLK
ML
MC
MD
/AUDRST
TP8415 PT
TP8420 PT
TP8419 PT
TP8418 PT
TP8417 PT
TP8424 PT
TP8408 PT
C8406 0.1
C8407 33/25V
R8407 8200
R8441 PT
C8404 100/16V
R8403 22K
C8403 10/16V
R8404 22K
R8406 22K
R8442 PT
R8405 22K
C8408 33/25V
C8409 100P
R8409 6200
R8411 15K
IC8401
AN6552S
(OP AMP)
VCC
GND
C8410 100P
R8410 6200
R8408 8200
C8405 10/16V
C8412 1000P
R8412 15K
C8411 1000P
R8415 PT
R8413 470
C8413 PT
C8414 4700P
L8400 LSLF0030
L8401 LSLF0030
TP8400 PT
C8425 10/16V
R8429 100
R8431 47K
AUDIO L 11
TO D III
GND A1 12
TO D III
R8416 PT
R8414 470
C8415 PT
C8416 4700P
L8410 LSLF0030
L8411 LSLF0030
TP8401 PT
C8426 10/16V
R8430 100
R8432 47K
AUDIO R 13
TO D III
D8003 MA3051-MTX (5.1V)
D8002 MA3051-MTX (5.1V)

LINK TO VOLTAGE CHART

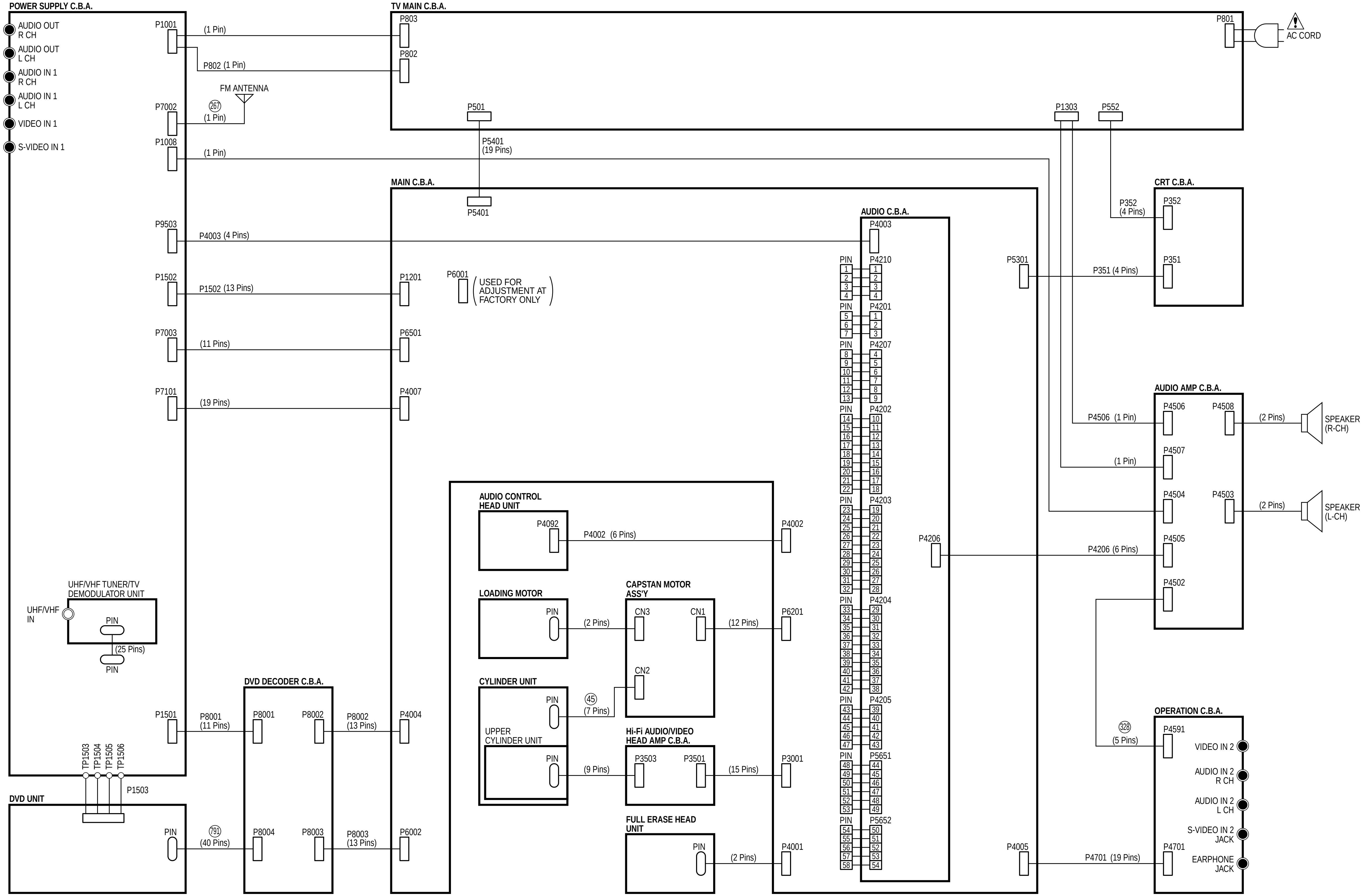
LSJB2007
PV-DF2002
DVD DECODER IV SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

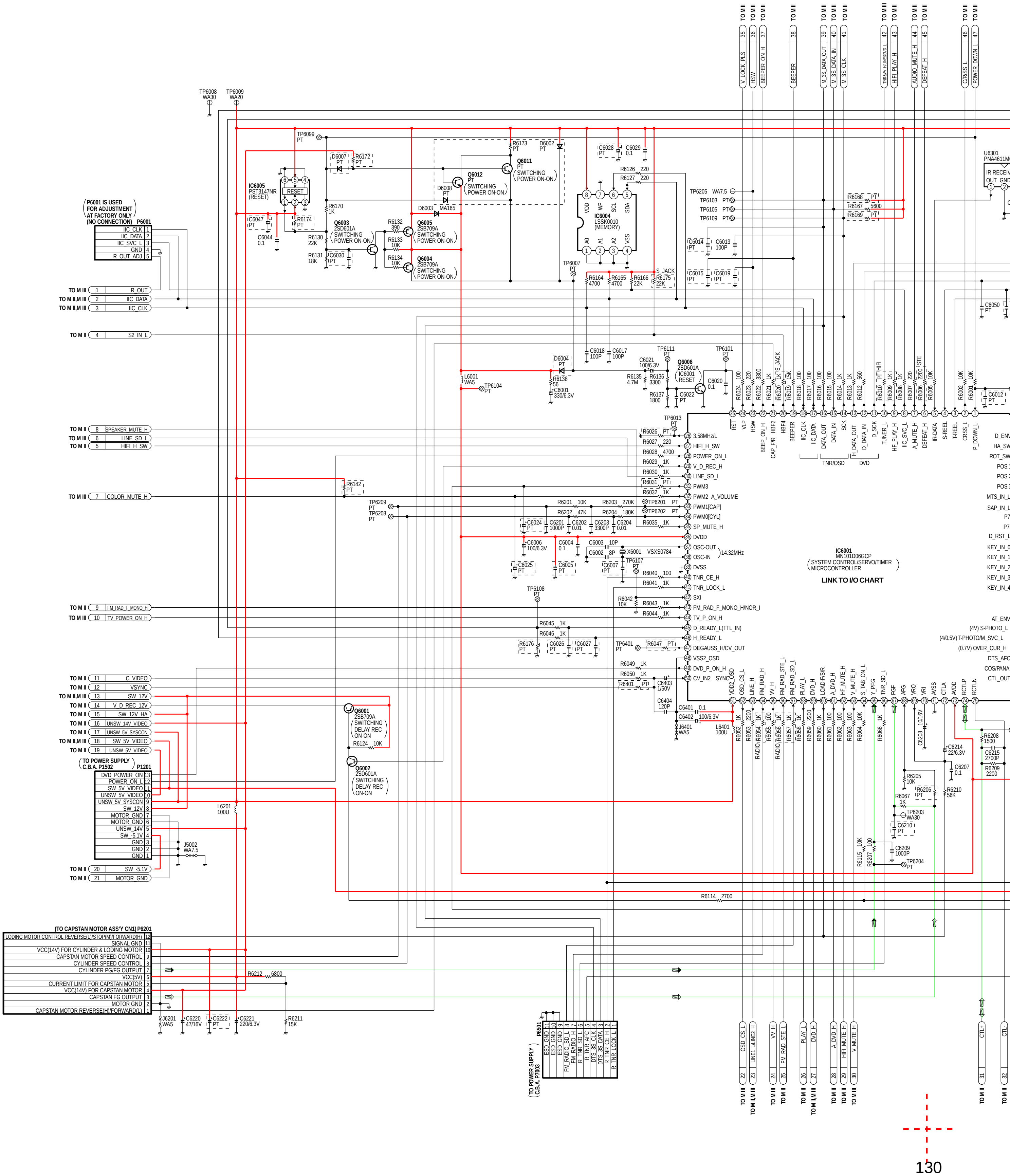
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.


POWER SUPPLY C.B.A.
AUDIO OUT R CH
AUDIO OUT L CH
AUDIO IN 1 R CH
AUDIO IN 1 L CH
VIDEO IN 1
S-VIDEO IN 1
P1001
(1 Pin)
P802 (1 Pin)
FM ANTENNA
P7002
267
(1 Pin)
P1008
(1 Pin)
P9503
P4003 (4 Pins)
P1502
P1502 (13 Pins)
P7003
(11 Pins)
P7101
(19 Pins)
UHF/VHF TUNER/TV DEMODULATOR UNIT
UHF/VHF IN
PIN
(25 Pins)
PIN
P1501
P8001 (11 Pins)
TP1503
TP1504
TP1505
TP1506
P1503
DVD UNIT
PIN
791
(40 Pins)
DVD DECODER C.B.A.
P8001
P8002
P8004
P8003
P8002 (13 Pins)
P8003 (13 Pins)
TV MAIN C.B.A.
P803
P802
P501
P1303
P552
P801
AC CORD
P5401 (19 Pins)
MAIN C.B.A.
P5401
P1201
P6001
USED FOR ADJUSTMENT AT FACTORY ONLY
P6501
P4007
P4004
P6002
AUDIO CONTROL HEAD UNIT
P4092
P4002 (6 Pins)
P4002
LOADING MOTOR
PIN
(2 Pins)
CAPSTAN MOTOR ASS'Y
CN3
CN1
(12 Pins)
P6201
CN2
CYLINDER UNIT
PIN
45
(7 Pins)
UPPER CYLINDER UNIT
PIN
(9 Pins)
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
P3503
P3501
(15 Pins)
P3001
FULL ERASE HEAD UNIT
PIN
(2 Pins)
P4001
AUDIO C.B.A.
P4003
PIN 1 2 3 4 — P4210 1 2 3 4
PIN 5 6 7 — P4201 1 2 3
PIN 8 9 10 11 12 13 — P4207 4 5 6 7 8 9
PIN 14 15 16 17 18 19 20 21 22 — P4202 10 11 12 13 14 15 16 17 18
PIN 23 24 25 26 27 28 29 30 31 32 — P4203 19 20 21 22 23 24 25 26 27 28
PIN 33 34 35 36 37 38 39 40 41 42 — P4204 29 30 31 32 33 34 35 36 37 38
PIN 43 44 45 46 47 — P4205 39 40 41 42 43
PIN 48 49 50 51 52 53 — P5651 44 45 46 47 48 49
PIN 54 55 56 57 58 — P5652 50 51 52 53 54
P4206
P5301
P4005
CRT C.B.A.
P352 (4 Pins)
P352
P351
P351 (4 Pins)
AUDIO AMP C.B.A.
P4506
P4508
P4506 (1 Pin)
(2 Pins)
SPEAKER (R-CH)
P4507
(1 Pin)
P4504
P4503
(2 Pins)
SPEAKER (L-CH)
P4505
P4206 (6 Pins)
P4502
OPERATION C.B.A.
328
(5 Pins)
P4591
VIDEO IN 2
AUDIO IN 2 R CH
AUDIO IN 2 L CH
S-VIDEO IN 2 JACK
P4701
P4701 (19 Pins)
EARPHONE JACK

8.2. MAIN SCHEMATIC DIAGRAMS

MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM


TO M II
TO M III
V_LOCK_PLS
HSW
BEEPER_ON_H
BEEPER
M_3S_DATA_OUT
M_3S_DATA_IN
M_3S_CLK
TNRAV_MUMEADV_L
HIFI_PLAY_H
AUDIO_MUTE_H
DEFEAT_H
CRISS_L
POWER_DOWN_L
TP6008 WA30
TP6009 WA20
TP6099 PT
IC6005 PST3147NR (RESET)
RESET
D6007 PT
R6172 PT
R6170 1K
R6174 PT
C6047 PT
C6044 0.1
Q6003 2SD601A SWITCHING POWER ON-ON
R6130 22K
R6131 18K
C6030 PT
R6132 390
R6133 10K
R6134 10K
Q6005 2SB709A SWITCHING POWER ON-ON
Q6004 2SB709A SWITCHING POWER ON-ON
D6003 MA165
D6008 PT
Q6012 PT SWITCHING POWER ON-ON
Q6011 PT SWITCHING POWER ON-ON
R6173 PT
D6002 PT
C6028 PT
C6029 0.1
R6126 220
R6127 220
IC6004 LSSK0010 (MEMORY)
VDD
WP
SCL
SDA
A0
A1
A2
VSS
TP6007 PT
R6164 4700
R6165 4700
R6166 22K
R6175 22K
S_JACK
TP6205 WA7.5
TP6103 PT
TP6105 PT
TP6109 PT
C6014 PT
C6013 100P
C6015 PT
C6019 PT
R6168 PT
R6167 5600
R6169 PT
U6301 PNA4611M
IR RECEIVER
OUT GND
(P6001 IS USED FOR ADJUSTMENT AT FACTORY ONLY (NO CONNECTION)) P6001
IIC_CLK
IIC_DATA
IIC_SVC_L
GND
R_OUT_ADJ
R_OUT
S2_IN_L
C6018 100P
C6017 100P
D6004 PT
R6138 56
C6001 330/6.3V
L6001 WA5
TP6104 PT
C6021 100/6.3V
R6135 4.7M
R6136 3300
R6137 1800
TP6111 PT
Q6006 2SD601A (IC6001 RESET)
C6022 PT
C6020 0.1
TP6101 PT
TP6013 PT
SPEAKER_MUTE_H
LINE_SD_L
HIFI_H_SW
COLOR_MUTE_H
R6142 PT
R6026 PT
R6027 220
R6028 4700
R6029 1K
R6030 1K
R6031 PT
R6032 1K
3.58MHz/L
HIFI_H_SW
POWER_ON_L
V_D_REC_H
LINE_SD_L
PWM3
PWM2_A_VOLUME
PWM1[CAP]
PWM0[CYL]
SP_MUTE_H
DVDD
OSC-OUT
OSC-IN
DVSS
TNR_CE_H
TNR_LOCK_L
SXI
FM_RAD_F_MONO_H/NOR_I
TV_P_ON_H
D_READY_L(TTL_IN)
H_READY_L
DEGAUSS_H/CV_OUT
VSS2_OSD
DVD_P_ON_H
CV_IN2
SYNC
TP6209 PT
TP6208 PT
R6201 10K
R6202 47K
R6203 270K
R6204 180K
TP6201 PT
TP6202 PT
R6035 1K
C6024 PT
C6201 1000P
C6202 0.01
C6203 3300P
C6204 0.01
C6006 100/6.3V
C6004 0.1
C6003 10P
C6002 8P
X6001 VSXS0784
14.32MHz
TP6107 PT
C6007 PT
C6025 PT
C6005 PT
R6040 100
R6041 1K
R6042 10K
R6043 1K
R6044 1K
TP6108 PT
R6045 1K
R6046 1K
R6176 PT
C6026 PT
C6027 PT
TP6401 PT
R6047 PT
R6049 1K
R6050 1K
R6401 PT
C6403 1/50V
C6404 120P
C6401 0.1
C6402 100/6.3V
J6401 WA5
L6401 100U
IC6001 MN101D06GCP (SYSTEM CONTROL/SERVO/TIMER MICROCONTROLLER)
LINK TO I/O CHART
TNR/OSD
DVD
RST
VLP
HSW
BEEP_ON_H
CAP_F/R
HBF2
HBF4
BEEPER
IIC_CLK
IIC_DATA
DATA_OUT
DATA_IN
SCK
H_DATA_OUT
D_DATA_IN
D_SCK
TUNER_L
HF_PLAY_H
IIC_SVC_L
A_MUTE_H
DEFEAT_H
IR-DATA
S-REEL
T-REEL
CRSS_L
P_DOWN_L
C6050 PT
C6012 PT
D_ENV
HA_SW
ROT_SW
POS.1
POS.2
POS.3
MTS_IN_L
SAP_IN_L
D_RST_L
KEY_IN_0
KEY_IN_1
KEY_IN_2
KEY_IN_3
KEY_IN_4
AT_ENV
(4V) S-PHOTO_L
(4/0.5V) T-PHOTO/M_SVC_L
(0.7V) OVER_CUR_H
DTS_AFC
COS/PANA
CTL_OUT
VDD2_OSD
OSD_CS_L
LINE_H
FM_RAD_H
VV_H
FM_RAD_STE_L
FM_RAD_SD_L
PLAY_L
DVD_H
LOAD-F/S/R
A_DVD_H
HF_MUTE_H
V_MUTE_H
S_TAB_ON_L
Y_PFG
TNR_SD_L
FGF
AFG
VRO
VRI
AVSS
CTLA
AVDD
RCTLP
RCTLN
C6208 10/16V
C6214 22/6.3V
C6207 0.1
R6208 1500
C6215 2700P
R6209 2200
R6205 10K
R6206 PT
R6067 1K
R6210 56K
TP6203 WA30
C6210 PT
C6209 1000P
TP6204 PT
R6115 10K
R6207 100
R6114 2700
C_VIDEO
VSYNC
SW_12V
V_D_REC_12V
SW_12V_HA
UNSW_14V_VIDEO
UNSW_5V_SYSCON
SW_5V_VIDEO
UNSW_5V_VIDEO
SW_-5.1V
MOTOR_GND
FM_RAD_F_MONO_H
TV_POWER_ON_H
Q6001 2SB709A SWITCHING DELAY REC ON-ON
R6124 10K
Q6002 2SD601A SWITCHING DELAY REC ON-ON
(TO POWER SUPPLY C.B.A. P1502) P1201
DVD_POWER_ON
POWER_ON_L
SW_5V_VIDEO
UNSW_5V_VIDEO
UNSW_5V_SYSCON
SW_12V
MOTOR_GND
UNSW_14V
SW_-5.1V
GND
L6201 100U
J5002 WA7.5
(TO CAPSTAN MOTOR ASS'Y CN1) P6201
LODING MOTOR CONTROL REVERSE(L)/STOP(M)/FORWARD(H)
SIGNAL GND
VCC(14V) FOR CYLINDER & LODING MOTOR
CAPSTAN MOTOR SPEED CONTROL
CYLINDER SPEED CONTROL
CYLINDER PG/FG OUTPUT
VCC(5V)
CURRENT LIMIT FOR CAPSTAN MOTOR
VCC(14V) FOR CAPSTAN MOTOR
CAPSTAN FG OUTPUT
MOTOR GND
CAPSTAN MOTOR REVERSE(H)/FORWARD(L)
R6212 6800
J6201 WA5
C6220 47/16V
C6222 PT
C6221 220/6.3V
R6211 15K
(TO POWER SUPPLY C.B.A. P7003) P6501
ESD_GND
FM_RADIO_SD_L
FM_RADIO_H
R_TNR_SD_L
R_TNR_AFC
DTS_3S_CLK
DTS_3S_DATA
R_TNR_CE_H
R_TNR_LOCK_L
OSD_CS_L
LINEI_LINE2_H
VV_H
FM_RAD_STE_L
PLAY_L
DVD_H
A_DVD_H
HIFI_MUTE_H
V_MUTE_H
CTL+
CTL-
TO M II,M III

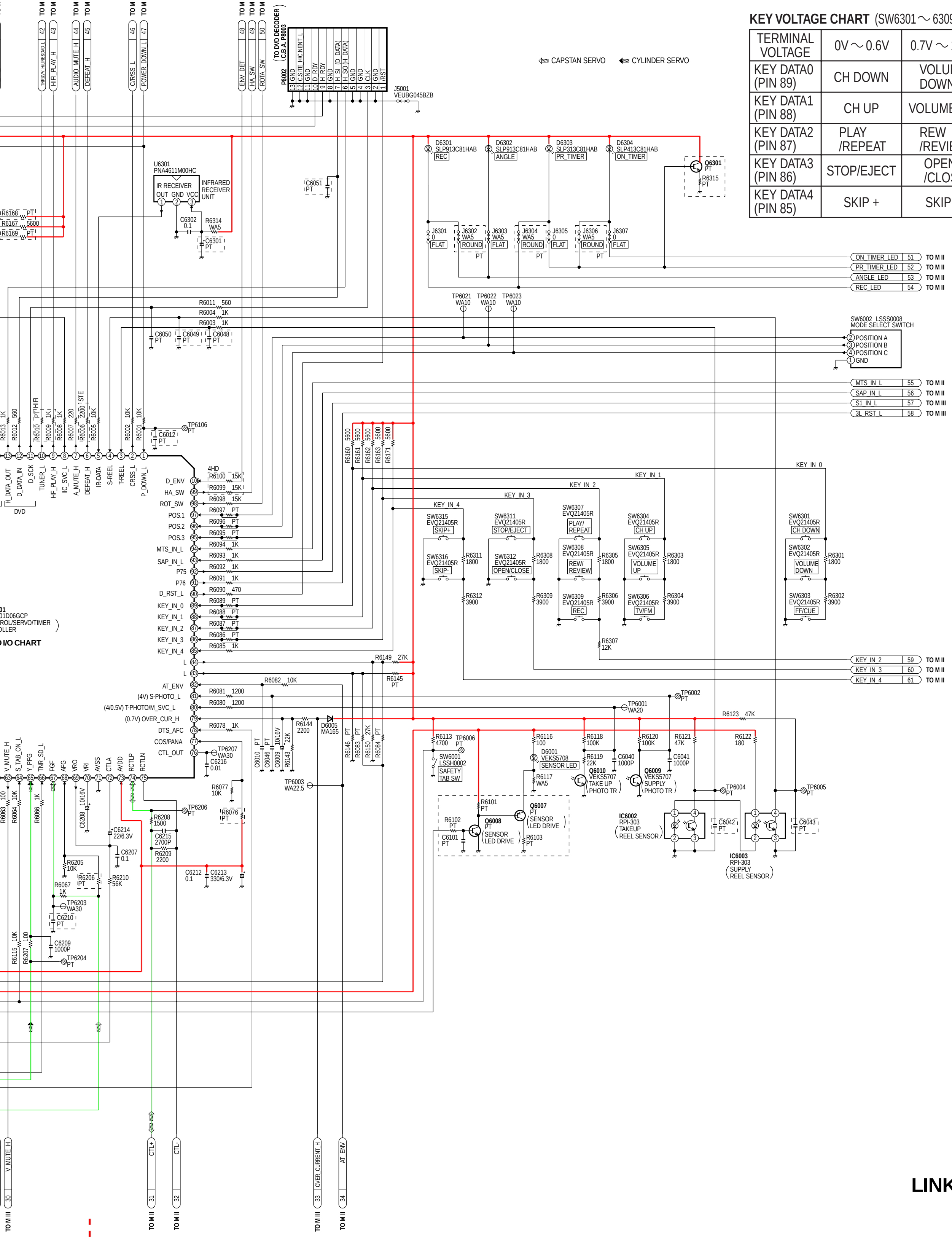
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

KEY VOLTAGE CHART (SW6301～6309,6311,6312,6315,6316,6383 ～ 6386)

TERMINAL VOLTAGE	0V～0.6V	0.7V～1.9V	2.0V～3.1V	3.2V～4.4V
KEY DATA0 (PIN 89)	CH DOWN	VOLUME DOWN	FF/CUE	-----
KEY DATA1 (PIN 88)	CH UP	VOLUME UP	TV/FM	-----
KEY DATA2 (PIN 87)	PLAY /REPEAT	REW /REVIEW	REC	DVD PLAY
KEY DATA3 (PIN 86)	STOP/EJECT	OPEN /CLOSE	POWER	DVD STOP
KEY DATA4 (PIN 85)	SKIP +	SKIP -	DVD PAUSE/STILL	-----

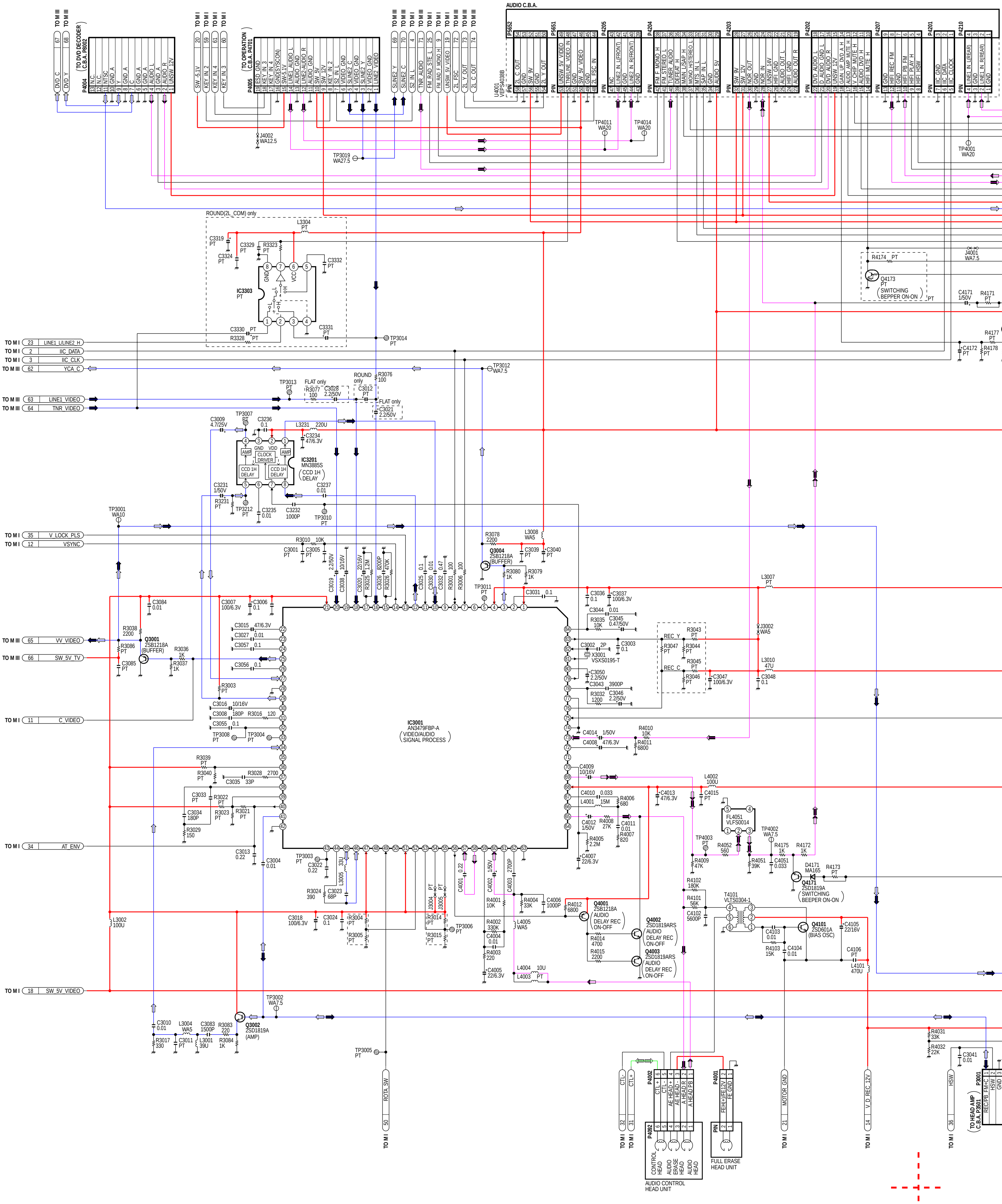


CAPSTAN SERVO
CYLINDER SERVO
P6002
TO DVD DECODER C.B.A. P8003
J5001 VEUBG045BZB
U6301 PNA4611M00HC
IR RECEIVER
INFRARED RECEIVER UNIT
OUT GND VCC
D6301 SLP913C81HAB REC
D6302 SLP913C81HAB ANGLE
D6303 SLP313C81HAB PR_TIMER
D6304 SLP413C81HAB ON_TIMER
Q6301 PT
ON_TIMER_LED 51 TO M II
PR_TIMER_LED 52 TO M II
ANGLE_LED 53 TO M II
REC_LED 54 TO M II
SW6002 LSSS0008 MODE SELECT SWITCH
POSITION A
POSITION B
POSITION C
GND
MTS_IN_L 55 TO M II
SAP_IN_L 56 TO M II
S1_IN_L 57 TO M III
3L_RST_L 58 TO M III
KEY_IN_0
KEY_IN_1
KEY_IN_2
KEY_IN_3
KEY_IN_4
SW6315 EVQ21405R SKIP+
SW6316 EVQ21405R SKIP-
SW6311 EVQ21405R STOP/EJECT
SW6312 EVQ21405R OPEN/CLOSE
SW6307 EVQ21405R PLAY/ REPEAT
SW6308 EVQ21405R REW/ REVIEW
SW6309 EVQ21405R REC
SW6304 EVQ21405R CH UP
SW6305 EVQ21405R VOLUME UP
SW6306 EVQ21405R TV/FM
SW6301 EVQ21405R CH DOWN
SW6302 EVQ21405R VOLUME DOWN
SW6303 EVQ21405R FF/CUE
KEY_IN_2 59 TO M II
KEY_IN_3 60 TO M II
KEY_IN_4 61 TO M II
SW6001 LSSH0002 SAFETY TAB SW
D6001 VEKS5708 SENSOR LED
Q6010 VEKS5707 TAKE UP PHOTO TR
Q6009 VEKS5707 SUPPLY PHOTO TR
Q6007 PT SENSOR LED DRIVE
Q6008 PT SENSOR LED DRIVE
IC6002 RPI-303 TAKEUP REEL SENSOR
IC6003 RPI-303 SUPPLY REEL SENSOR
D6005 MA165
I/O CHART
DVD
V_MUTE_H 30 TO M III
CTL+ 31 TO M II
CTL- 32 TO M II
OVER_CURRENT_H 33 TO M III
AT_ENV 34 TO M II

LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN I SCHEMATIC DIAGRAM

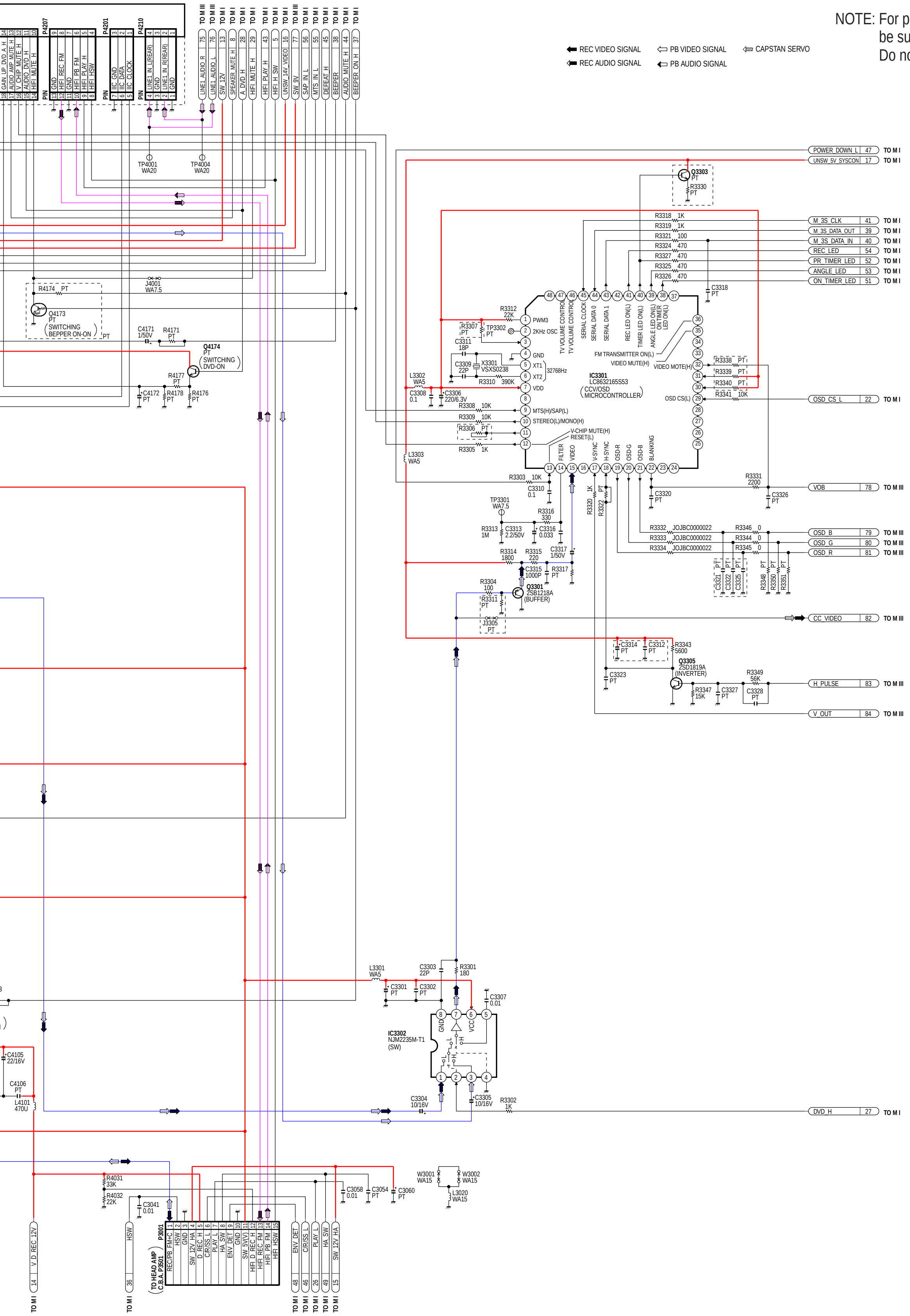
MAIN II (SIGNAL PROCESS/AUDIO) SCHEMATIC DIAGRAM


AUDIO C.B.A.
P4004
(TO DVD DECODER C.B.A. PB002)
P4005
(TO OPERATION C.B.A. PA701)
P5652
P5651
P4205
P4204
P4203
P4202
P4207
P4201
P4210
U4001 VEP34038B
TO M III
TO M I
DVD_C
DVD_Y
SW_5.1V
KEY_IN_2
KEY_IN_3
KEY_IN_4
SLINE2_Y
SLINE2_C
S2_IN_L
TNR_AUDIO
FM_RAD_STE_L
FM_RAD_F_MONO_H
UNSW_5V_VIDEO
2L_FSC
2L_Y_OUT
2L_C_OUT
TP4011 WA20
TP4014 WA20
TP4001 WA20
J4002 WA12.5
TP3019 WA27.5
ROUND(2L_COM) only
L3304 PT
C3319 PT
C3329 PT
R3323 PT
C3324 PT
C3332 PT
IC3303 PT
GND
VCC
C3330 PT
R3328 PT
C3331 PT
TP3014 PT
J4001 WA7.5
R4174 PT
Q4173 PT
(SWITCHING BEPPER ON-ON)
C4171 1/50V
R4171 PT
R4177 PT
C4172 PT
R4178 PT
TO M I 23 LINE1_L/LINE2_H
TO M I 2 IIC_DATA
TO M I 3 IIC_CLK
TO M III 62 YCA_C
TP3012 WA7.5
TO M III 63 LINE1_VIDEO
TO M III 64 TNR_VIDEO
TP3013 PT
FLAT only
R3077 100
C3028 2.2/50V
ROUND only
R3076 100
C3012 PT
C3021 2.2/50V
TP3007 PT
C3009 4.7/25V
C3236 0.1
L3231 220U
C3234 47/6.3V
IC3201 MN3885S (CCD 1H DELAY)
AMP
CLOCK DRIVER
CCD 1H DELAY
C3231 1/50V
R3231 PT
TP3212 PT
C3235 0.01
C3232 1000P
C3237 0.01
TP3010 PT
TP3001 WA10
TO M I 35 V_LOCK_PLS
TO M I 12 VSYNC
R3010 10K
C3001 PT
C3005 PT
R3078 2200
L3008 WA5
Q3004 2SB1218A (BUFFER)
C3039 PT
C3040 PT
R3080 1K
R3079 1K
TP3011 PT
C3031 0.1
C3084 0.01
C3007 100/6.3V
C3006 0.1
R3038 2200
Q3001 2SB1218A (BUFFER)
TO M III 65 VV_VIDEO
TO M III 66 SW_5V_TV
R3086 PT
R3036 1K
R3037 1K
C3085 PT
C3015 47/6.3V
C3027 0.01
C3057 0.1
C3056 0.1
R3003 PT
C3016 10/16V
C3008 180P
R3016 120
C3055 0.1
TP3008 PT
TP3004 PT
TO M I 11 C_VIDEO
IC3001 AN3479FBP-A (VIDEO/AUDIO SIGNAL PROCESS)
R3039 PT
R3040 PT
R3028 2700
C3035 33P
C3033 PT
R3022 PT
C3034 180P
R3023 PT
R3021 PT
R3029 150
TO M I 34 AT_ENV
C3013 0.22
C3004 0.01
TP3003 PT
C3022 0.22
R3024 390
C3023 68P
L3002 100U
C3018 100/6.3V
C3024 0.1
R3004 PT
R3005 PT
R3014 PT
R3015 PT
TP3006 PT
TO M I 18 SW_5V_VIDEO
TP3002 WA7.5
Q3002 2SD1819A (AMP)
C3010 0.01
L3004 WA5
C3083 1500P
R3083 220
R3017 330
C3011 PT
L3001 39U
R3084 1K
TP3005 PT
ROTA_SW
TO M I 50
C3036 0.1
C3037 100/6.3V
C3044 0.01
R3035 10K
C3045 0.47/50V
C3002 2P
C3003 0.1
X3001 VSXS0195-T
REC_Y
R3043 PT
R3047 PT
R3044 PT
REC_C
R3045 PT
R3046 PT
C3047 100/6.3V
C3050 2.2/50V
C3043 3900P
R3032 1200
C3046 2.2/50V
L3007 PT
J3002 WA5
L3010 47U
C3048 0.1
C4014 1/50V
C4008 47/6.3V
R4010 10K
R4011 6800
C4009 10/16V
L4002 100U
C4010 0.033
L4001 15M
R4006 680
C4013 47/6.3V
C4015 PT
C4012 1/50V
R4008 27K
C4011 0.01
R4007 820
R4005 2.2M
C4007 22/6.3V
FL4051 VLFS0014
TP4003 PT
TP4002 WA7.5
R4052 560
R4175 1K
R4172 1K
R4009 47K
R4051 39K
C4051 0.033
D4171 MA165
R4173 PT
Q4171 2SD1819A (SWITCHING BEEPER ON-ON)
R4102 180K
R4101 56K
C4102 5600P
T4101 VLTS0304-1
Q4101 2SD601A (BIAS OSC)
C4105 22/16V
C4103 0.01
R4103 15K
C4104 0.01
C4106 PT
L4101 470U
R4001 10K
C4006 1000P
R4004 33K
R4012 6800
Q4001 2SB1218A (AUDIO DELAY REC ON-OFF)
R4002 330K
C4004 0.01
L4005 WA5
R4003 220
C4005 22/6.3V
R4014 4700
R4015 2200
Q4002 2SD1819ARS (AUDIO DELAY REC ON-OFF)
Q4003 2SD1819ARS (AUDIO DELAY REC ON-OFF)
L4004 10U
L4003 PT
CTL- TO M I 32
CTL+ TO M I 31
P4092
CONTROL HEAD
AUDIO ERASE HEAD
AUDIO HEAD
AUDIO CONTROL HEAD UNIT
P4001
FEH(+)/FE(12V)
FE GND
FULL ERASE HEAD UNIT
MOTOR_GND TO M I 21
V_D_REC_12V TO M I 14
HSW TO M I 36
P3001 (TO HEAD AMP C.B.A. P3501)
R4031 33K
R4032 22K
C3041 0.01

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.



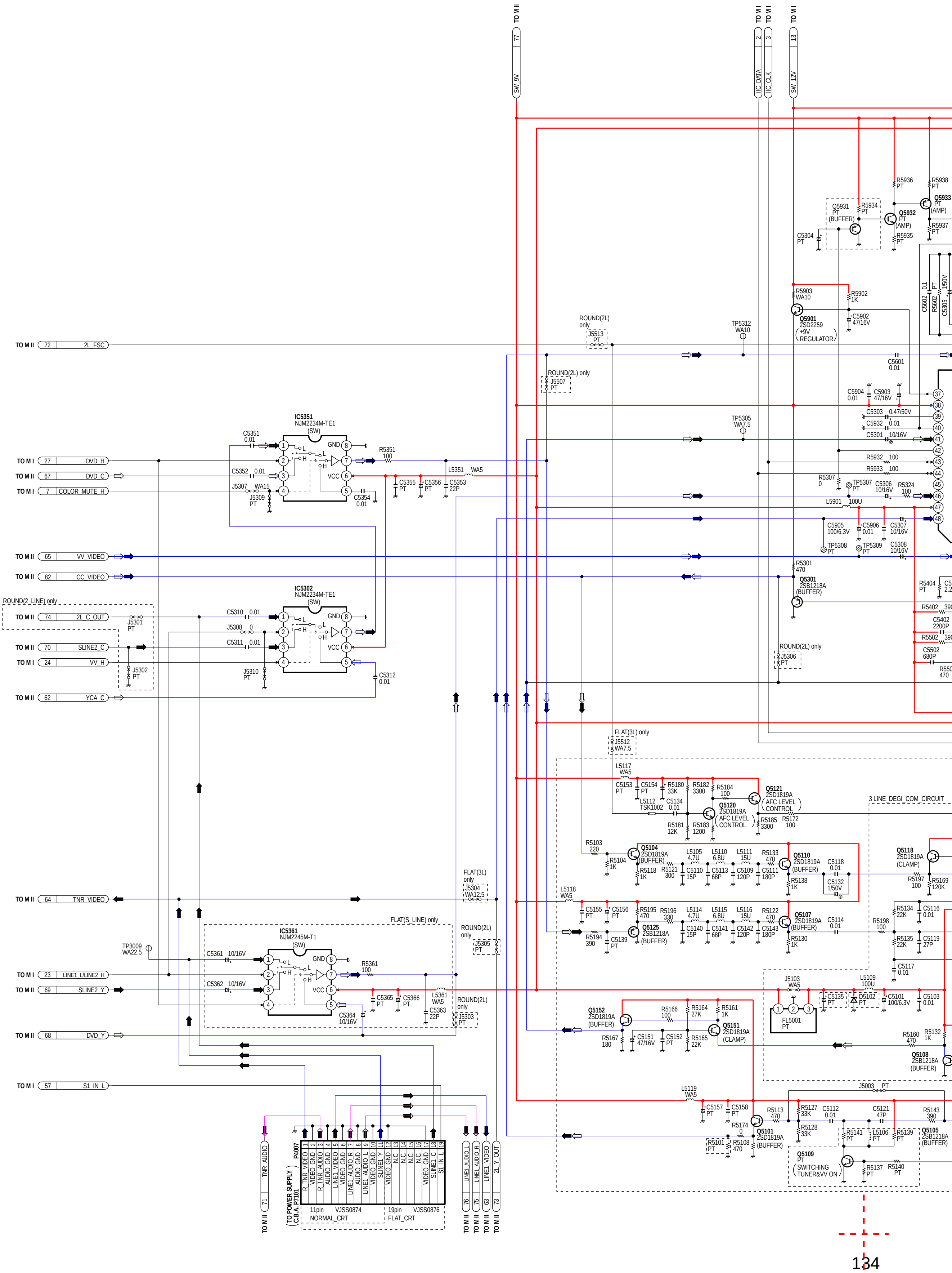
REC VIDEO SIGNAL
PB VIDEO SIGNAL
CAPSTAN SERVO
REC AUDIO SIGNAL
PB AUDIO SIGNAL
P4207
P4201
P4210
IIC GND
IIC DATA
IIC CLOCK
LINE1 IN_L(REAR)
LINE1 IN_R(REAR)
GND
LINE1_AUDIO_R
LINE1_AUDIO_L
SW_12V
SPEAKER_MUTE_H
A_DVD_H
HIFI_MUTE_H
HIFI_PLAY_H
HIFI_H_SW
UNSW_12V_VIDEO
SW_9V
SAP_IN_L
MTS_IN_L
DEFEAT_H
BEEPER
AUDIO_MUTE_H
BEEPER_ON_H
TP4001 WA20
TP4004 WA20
J4001 WA7.5
Q4173 PT SWITCHING BEPPER ON-ON
Q4174 PT SWITCHING DVD-ON
POWER_DOWN_L
UNSW_5V_SYSCON
Q3303 PT
M_3S_CLK
M_3S_DATA_OUT
M_3S_DATA_IN
REC_LED
PR_TIMER_LED
ANGLE_LED
ON_TIMER_LED
IC3301 LC863216S5S3 (CCV/OSD MICROCONTROLLER)
X3301 VSXS0238 32768Hz
PWM3
2KHz OSC
GND
XT1
XT2
VDD
MTS(H)/SAP(L)
STEREO(L)/MONO(H)
V-CHIP MUTE(H) RESET(L)
FM TRANSMITTER ON(L)
VIDEO MUTE(H)
VIDEO MOTE(H)
OSD CS(L)
OSD_CS_L
TV VOLUME CONTROL
SERIAL CLOCK
SERIAL DATA 0
SERIAL DATA 1
REC LED ON(L)
TIMER LED ON(L)
ANGLE LED ON(L)
ON TIMER LED ON(L)
FILTER
VIDEO
V-SYNC
H-SYNC
OSD-R
OSD-G
OSD-B
BLANKING
VOB
OSD_B
OSD_G
OSD_R
Q3301 2SB1218A (BUFFER)
CC_VIDEO
Q3305 2SD1819A (INVERTER)
H_PULSE
V_OUT
IC3302 NJM2235M-T1 (SW)
DVD_H
TO HEAD AMP C.B.A. P3501
P3001
V_D_REC_12V
HSW
ENV_DET
CR/ISS_L
PLAY_L
HA_SW
SW_12V_HA
TO M I
TO M III

LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN II SCHEMATIC DIAGRAM

MAIN III (TV Y/C PROCESS) SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAV
SPECIAL CHARACTERISTICS IMPORTANT FOR SA
WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY THE SPECIFIED PARTS.



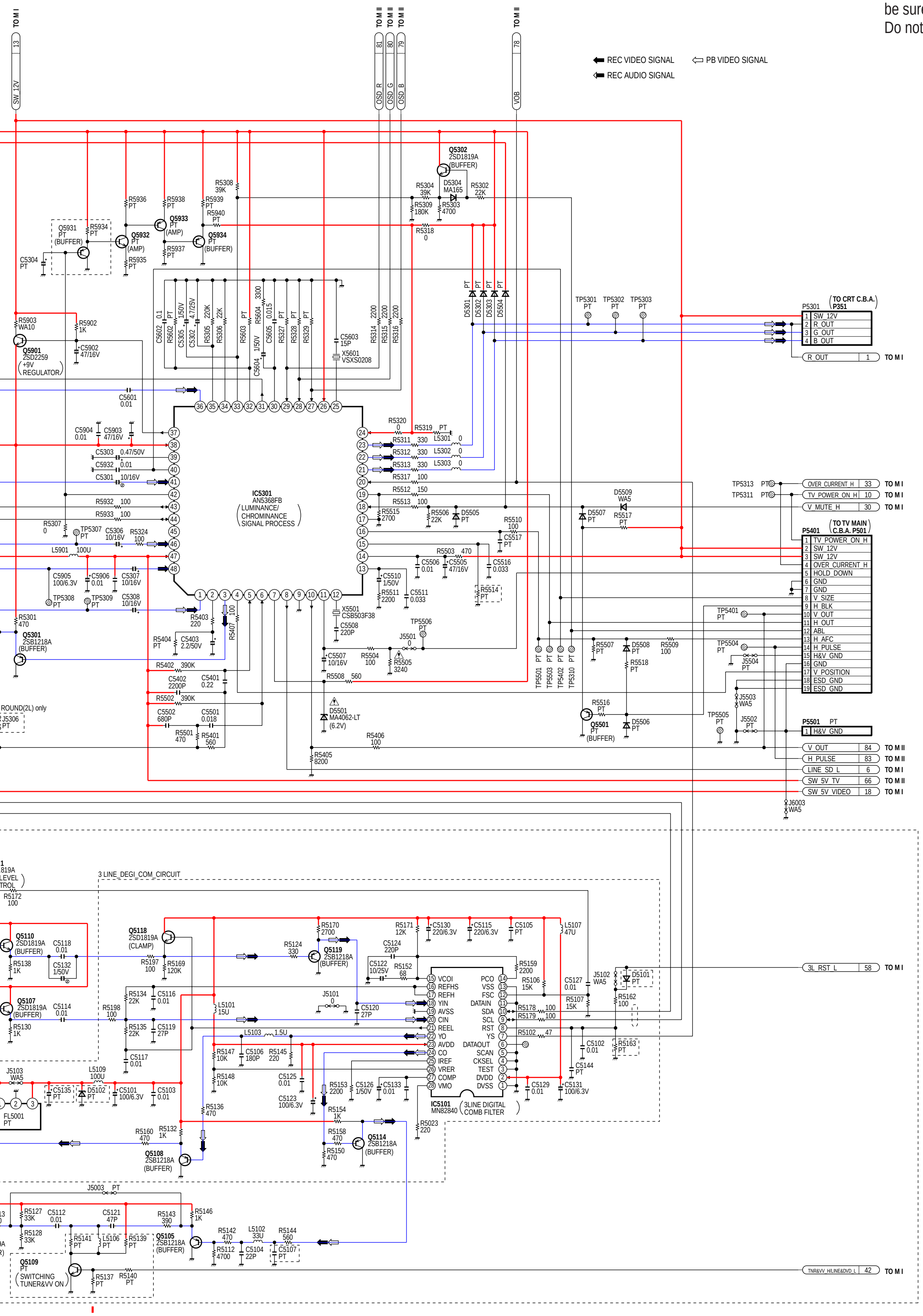
TO M II 77 SW 9V
TO M I 2 IIC DATA
TO M I 3 IIC CLK
TO M I 13 SW 12V
TO M II 72 2L FSC
TO M I 27 DVD H
TO M II 67 DVD C
TO M I 7 COLOR MUTE H
TO M II 65 VV VIDEO
TO M II 82 CC VIDEO
ROUND(2_LINE) only
TO M II 74 2L C OUT
TO M II 70 SLINE2 C
TO M I 24 VV H
TO M II 62 YCA C
TO M II 64 TNR VIDEO
TO M I 23 LINE1 L/LINE2 H
TO M II 69 SLINE2 Y
TO M II 68 DVD Y
TO M I 57 S1 IN L
IC5351 NJM2234M-TE1 (SW)
IC5302 NJM2234M-TE1 (SW)
IC5361 NJM2245M-T1 (SW)
GND
VCC
C5351 0.01
C5352 0.01
J5307 WA15
J5309 PT
R5351 100
L5351 WA5
C5355 PT
C5356 PT
C5353 22P
C5354 0.01
J5301 PT
J5302 PT
C5310 0.01
J5308 0
C5311 0.01
J5310 PT
C5312 0.01
TP3009 WA22.5
C5361 10/16V
C5362 10/16V
R5361 100
C5365 PT
C5366 PT
L5361 WA5
C5363 22P
C5364 10/16V
FLAT(S_LINE) only
ROUND(2L) only
J5305 PT
J5303 PT
FLAT(3L) only
J5304 WA12.5
ROUND(2L) only
J5513 PT
ROUND(2L) only
J5507 PT
TP5312 WA10
TP5305 WA7.5
Q5931 PT (BUFFER)
Q5932 PT (AMP)
Q5933 PT (AMP)
R5936 PT
R5938 PT
R5934 PT
R5937 PT
R5935 PT
C5304 PT
R5903 WA10
R5902 1K
Q5901 2SD2259 +9V REGULATOR
C5902 47/16V
C5602 0.1
R5602 PT
C5305 1/50V
C5601 0.01
C5904 0.01
C5903 47/16V
C5303 0.47/50V
C5932 0.01
C5301 10/16V
R5932 100
R5933 100
R5307 0
TP5307 PT
C5306 10/16V
R5324 100
L5901 100U
C5905 100/6.3V
C5906 0.01
C5307 10/16V
TP5308 PT
TP5309 PT
C5308 10/16V
R5301 470
Q5301 2SB1218A (BUFFER)
R5404 PT
R5402 390
C5402 2200P
R5502 390
C5502 680P
R5504 470
ROUND(2L) only
J5306 PT
37 38 39 40 41 42 43 44 45 46 47 48
FLAT(3L) only
J5512 WA7.5
L5117 WA5
C5153 PT
C5154 PT
R5180 33K
R5182 3300
R5184 100
L5112 TSK1002
C5134 0.01
Q5121 2SD1819A AFC LEVEL CONTROL
Q5120 2SD1819A AFC LEVEL CONTROL
R5181 12K
R5183 1200
R5185 3300
R5172 100
3 LINE_DEGI_COM_CIRCUIT
R5103 220
Q5104 2SD1819A (BUFFER)
R5104 1K
R5118 1K
R5121 300
L5105 4.7U
L5110 6.8U
L5111 15U
R5133 470
C5110 15P
C5113 68P
C5109 120P
C5111 180P
Q5110 2SD1819A (BUFFER)
C5118 0.01
R5138 1K
C5132 1/50V
Q5118 2SD1819A (CLAMP)
R5197 100
R5169 120K
L5118 WA5
C5155 PT
C5156 PT
R5195 470
R5196 330
L5114 4.7U
L5115 6.8U
L5116 15U
R5122 470
Q5107 2SD1819A (BUFFER)
C5114 0.01
R5194 390
C5139 PT
Q5125 2SB1218A (BUFFER)
C5140 15P
C5141 68P
C5142 120P
C5143 180P
R5130 1K
R5198 100
R5134 22K
C5116 0.01
R5135 22K
C5119 27P
C5117 0.01
J5103 WA5
L5109 100U
C5135 PT
D5102 PT
C5101 100/6.3V
C5103 0.01
FL5001 PT
Q5152 2SD1819A (BUFFER)
R5166 100
R5164 27K
R5161 1K
Q5151 2SD1819A (CLAMP)
R5167 180
C5151 47/16V
C5152 PT
R5165 22K
R5160 470
R5132 1K
Q5108 2SB1218A (BUFFER)
J5003 PT
L5119 WA5
C5157 PT
C5158 PT
R5113 470
R5127 33K
C5112 0.01
C5121 47P
R5143 390
R5174 0
Q5101 2SD1819A (BUFFER)
R5128 33K
R5141 PT
L5106 PT
R5139 PT
Q5105 2SB1218A (BUFFER)
R5101 PT
R5108 470
Q5109 PT SWITCHING TUNER&VV ON
R5137 PT
R5140 PT
P4007
(TO POWER SUPPLY C.B.A. P7101)
1 R TNR VIDEO
2 VIDEO GND
3 R TNR AUDIO
4 AUDIO GND
5 LINE1 VIDEO
6 VIDEO GND
7 LINE1 AUDIO R
8 AUDIO GND
9 LINE1 AUDIO L
10 VIDEO GND
11 SLINE1 Y
12 VIDEO GND
13 N.C.
14 N.C.
15 N.C.
16 N.C.
17 VIDEO GND
18 SLINE1 C
19 S1 IN L
11pin VJSS0874 NORMAL_CRT
19pin VJSS0876 FLAT_CRT
TO M II 71 TNR AUDIO
TO M II 76 LINE1 AUDIO L
TO M II 75 LINE1 AUDIO R
TO M II 63 LINE1 VIDEO
TO M II 73 2L Y OUT

FETY NOTICE:
DENTIFIED BY THE SIGN ⚠ HAVE
CTERISTICS IMPORTANT FOR SAFETY.
NG ANY OF THESE COMPONENTS,
SPECIFIED PARTS.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



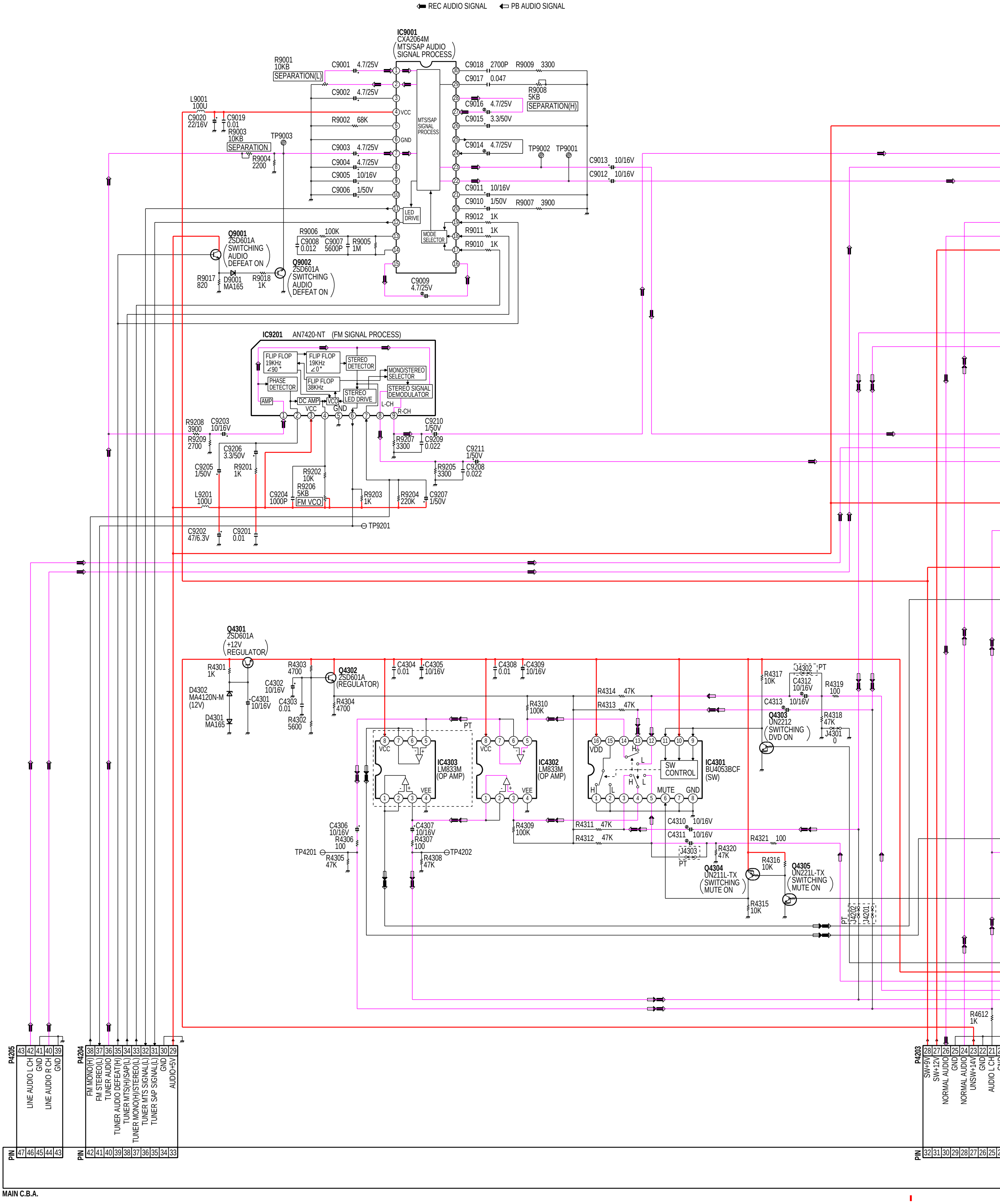
REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
TO M I
TO M II
SW_12V
OSD_R
OSD_G
OSD_B
VOB
Q5302 2SD1819A (BUFFER)
Q5931 PT (BUFFER)
Q5932 PT (AMP)
Q5933 PT (AMP)
Q5934 PT (BUFFER)
Q5901 2SD2259 +9V REGULATOR
X5601 VSXS0208
IC5301 AN5368FB (LUMINANCE/ CHROMINANCE SIGNAL PROCESS)
X5501 CSB503F38
D5501 MA4062-LT (6.2V)
Q5301 2SB1218A (BUFFER)
Q5501 PT (BUFFER)
P5301 (TO CRT C.B.A. P351)
SW_12V
R_OUT
G_OUT
B_OUT
P5401 (TO TV MAIN C.B.A. P501)
TV_POWER_ON_H
SW_12V
SW_12V
OVER_CURRENT_H
HOLD_DOWN
GND
GND
V_SIZE
H_BLK
V_OUT
H_OUT
ABL
H_AFC
H_PULSE
H&V_GND
GND
V_POSITION
ESD_GND
ESD_GND
P5501 PT
H&V_GND
R_OUT
OVER_CURRENT_H
TV_POWER_ON_H
V_MUTE_H
V_OUT
H_PULSE
LINE_SD_L
SW_5V_TV
SW_5V_VIDEO
3L_RST_L
TNR&VV_H/LINE&DVD_L
3 LINE_DEGI_COM_CIRCUIT
Q5110 2SD1819A (BUFFER)
Q5107 2SD1819A (BUFFER)
Q5118 2SD1819A (CLAMP)
Q5119 2SB1218A (BUFFER)
IC5101 MN82840 (3LINE DIGITAL COMB FILTER)
Q5114 2SB1218A (BUFFER)
Q5108 2SB1218A (BUFFER)
Q5105 2SB1218A (BUFFER)
Q5109 PT (SWITCHING TUNER&VV ON)
FL5001 PT

LINK TO VOLTAGE CHART

LSJB2064
PV-DF2002
MAIN III SCHEMATIC DIAGRAM

8.3. AUDIO SCHEMATIC DIAGRAMS

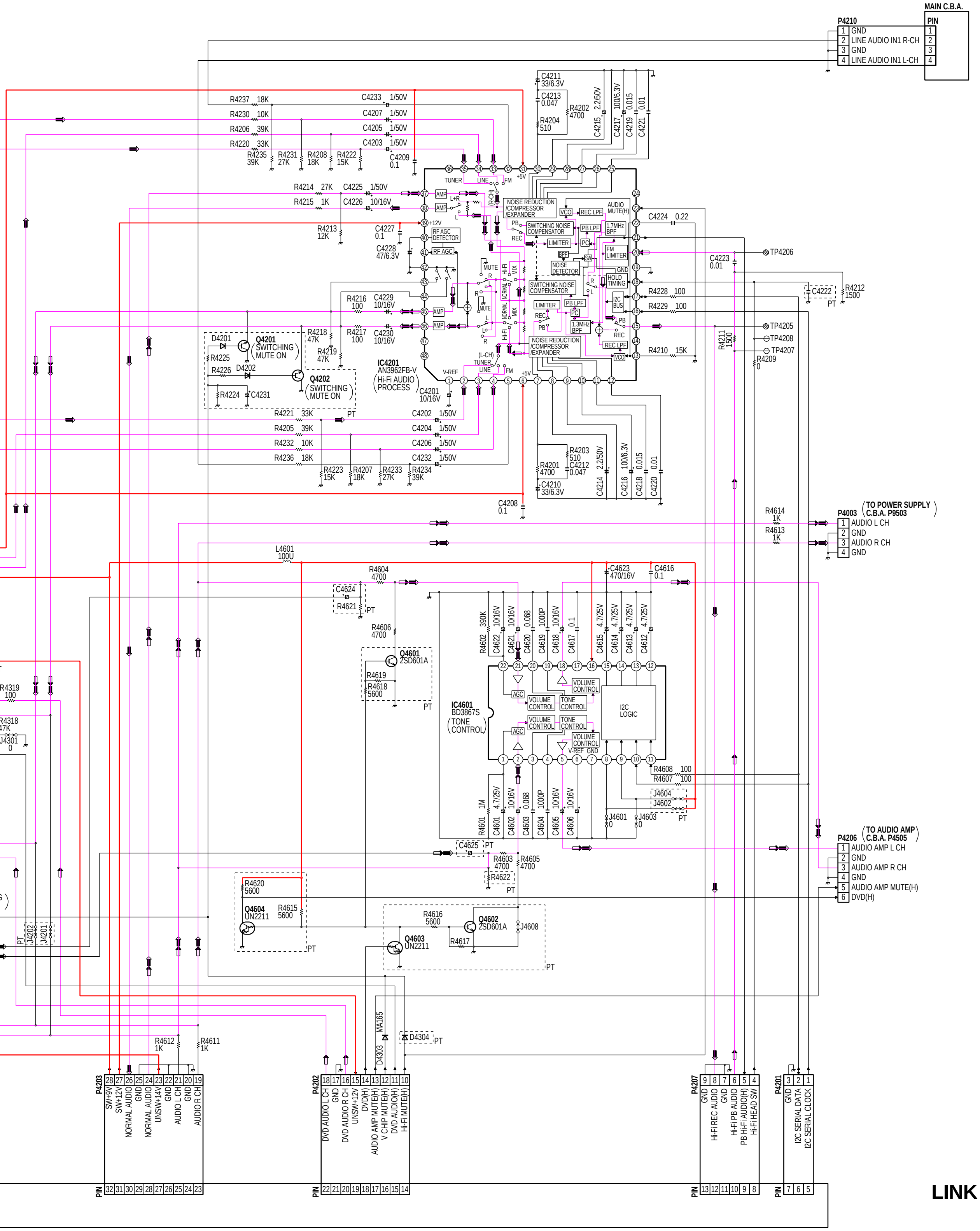
AUDIO SCHEMATIC I DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
IC9001
CXA2064M
(MTS/SAP AUDIO SIGNAL PROCESS)
MTS/SAP SIGNAL PROCESS
VCC
GND
LED DRIVE
MODE SELECTOR
R9001 10KB
SEPARATION(L)
SEPARATION(H)
R9008 5KB
L9001 100U
C9020 22/16V
C9019 0.01
R9003 10KB
SEPARATION
TP9003
R9004 2200
C9001 4.7/25V
C9002 4.7/25V
R9002 68K
C9003 4.7/25V
C9004 4.7/25V
C9005 10/16V
C9006 1/50V
C9018 2700P
R9009 3300
C9017 0.047
C9016 4.7/25V
C9015 3.3/50V
C9014 4.7/25V
TP9002
TP9001
C9013 10/16V
C9012 10/16V
C9011 10/16V
C9010 1/50V
R9007 3900
R9012 1K
R9011 1K
R9010 1K
R9006 100K
C9008 0.012
C9007 5600P
R9005 1M
C9009 4.7/25V
Q9001 2SD601A (SWITCHING AUDIO DEFEAT ON)
Q9002 2SD601A (SWITCHING AUDIO DEFEAT ON)
R9017 820
D9001 MA165
R9018 1K
IC9201 AN7420-NT (FM SIGNAL PROCESS)
FLIP FLOP 19KHz ∠90°
FLIP FLOP 19KHz ∠0°
STEREO DETECTOR
MONO/STEREO SELECTOR
PHASE DETECTOR
FLIP FLOP 38KHz
STEREO LED DRIVE
STEREO SIGNAL DEMODULATOR
AMP
DC AMP
VCO
VCC
GND
L-CH
R-CH
R9208 3900
C9203 10/16V
R9209 2700
C9206 3.3/50V
C9205 1/50V
R9201 1K
L9201 100U
C9204 1000P
R9202 10K
R9206 5KB
FM VCO
R9203 1K
R9204 220K
C9207 1/50V
R9207 3300
C9209 0.022
C9210 1/50V
C9211 1/50V
R9205 3300
C9208 0.022
C9202 47/6.3V
C9201 0.01
TP9201
Q4301 2SD601A (+12V REGULATOR)
R4301 1K
D4302 MA4120N-M (12V)
D4301 MA165
C4302 10/16V
C4301 10/16V
C4303 0.01
R4302 5600
R4303 4700
Q4302 2SD601A (REGULATOR)
R4304 4700
C4304 0.01
C4305 10/16V
C4308 0.01
C4309 10/16V
PT
IC4303 LM833M (OP AMP)
IC4302 LM833M (OP AMP)
VCC
VEE
R4310 100K
R4309 100K
C4306 10/16V
R4306 100
R4305 47K
TP4201
C4307 10/16V
R4307 100
R4308 47K
TP4202
R4314 47K
R4313 47K
R4311 47K
R4312 47K
IC4301 BU4053BCF (SW)
VDD
SW CONTROL
MUTE
GND
H
L
C4310 10/16V
C4311 10/16V
J4303
R4320 47K
Q4304 UN211L-TX (SWITCHING MUTE ON)
R4317 10K
J4302
C4312 10/16V
R4319 100
C4313 10/16V
Q4303 UN2212 (SWITCHING DVD ON)
R4318 47K
J4301 0
R4321 100
R4316 10K
Q4305 UN221L-TX (SWITCHING MUTE ON)
R4315 10K
J4202
J4201
R4612 1K
P4205
PIN
43 42 41 40 39
47 46 45 44 43
LINE AUDIO L CH
GND
LINE AUDIO R CH
GND
P4204
38 37 36 35 34 33 32 31 30 29
42 41 40 39 38 37 36 35 34 33
FM MONO(H)
FM STEREO(L)
TUNER AUDIO
TUNER AUDIO DEFEAT(H)
TUNER MTS(H)/SAP(L)
TUNER MONO(H)/STEREO(L)
TUNER MTS SIGNAL(L)
TUNER SAP SIGNAL(L)
GND
AUDIO+5V
P4203
28 27 26 25 24 23 22 21
32 31 30 29 28 27 26 25
SW+9V
SW+12V
NORMAL AUDIO
GND
NORMAL AUDIO
UNSW+14V
GND
AUDIO L CH
MAIN C.B.A.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

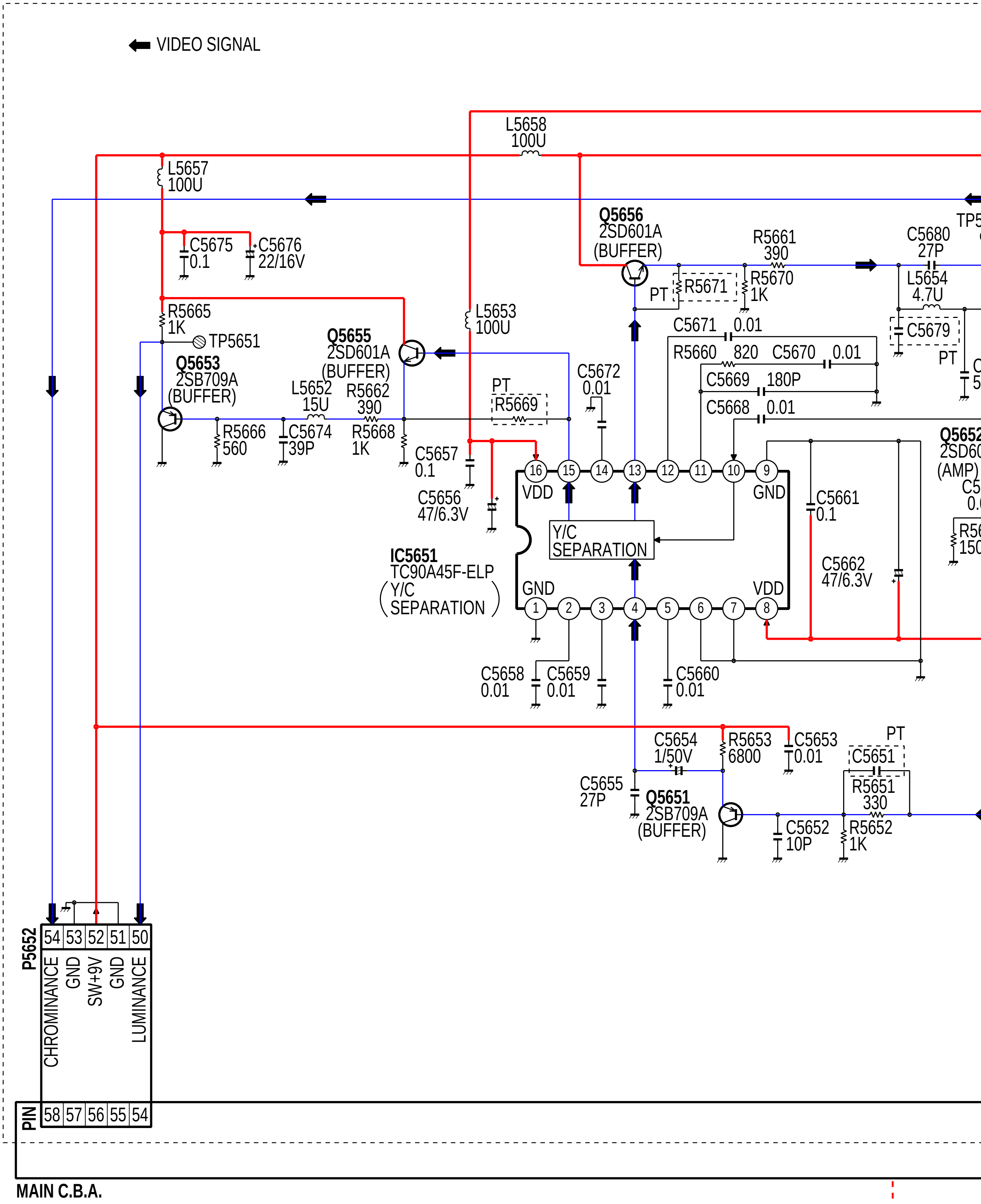
NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.


MAIN C.B.A.
P4210
PIN
1 GND
2 LINE AUDIO IN1 R-CH
3 GND
4 LINE AUDIO IN1 L-CH
IC4201
AN3962FB-V
(Hi-Fi AUDIO PROCESS)
TUNER
LINE
FM
NOISE REDUCTION /COMPRESSOR /EXPANDER
SWITCHING NOISE COMPENSATOR
LIMITER
NOISE DETECTOR
RF AGC DETECTOR
RF AGC
AMP
VCO
REC LPF
PB LPF
PC
BPF
1.7MHz BPF
1.3MHz BPF
FM LIMITER
HOLD TIMING
I2C BUS
AUDIO MUTE(H)
MUTE
NORMAL
MIX
Hi-Fi
V-REF
+5V
+12V
Q4201 SWITCHING MUTE ON
Q4202 SWITCHING MUTE ON
D4201
D4202
TP4206
TP4205
TP4208
TP4207
IC4601
BD3867S
(TONE CONTROL)
VOLUME CONTROL
TONE CONTROL
AGC
I2C LOGIC
Q4601 2SD601A
Q4602 2SD601A
Q4603 UN2211
Q4604 UN2211
L4601 100U
D4303 MA165
D4304
P4003 (TO POWER SUPPLY C.B.A. P9503)
1 AUDIO L CH
2 GND
3 AUDIO R CH
4 GND
P4206 (TO AUDIO AMP C.B.A. P4505)
1 AUDIO AMP L CH
2 GND
3 AUDIO AMP R CH
4 GND
5 AUDIO AMP MUTE(H)
6 DVD(H)
P4203
SW+9V
SW+12V
NORMAL AUDIO
GND
NORMAL AUDIO
UNSW+14V
GND
AUDIO L CH
GND
AUDIO R CH
P4202
DVD AUDIO L CH
GND
DVD AUDIO R CH
UNSW+12V
DVD(H)
AUDIO AMP MUTE(H)
V CHIP MUTE(H)
DVD AUDIO(H)
Hi-Fi MUTE(H)
P4207
GND
Hi-Fi REC AUDIO
GND
Hi-Fi PB AUDIO
PB Hi-Fi AUDIO(H)
Hi-Fi HEAD SW
P4201
GND
I2C SERIAL DATA
I2C SERIAL CLOCK
PT

LINK TO VOLTAGE CHART

VJBS4038
PV-DF2002
AUDIO SCHEMATIC I DIAGRAM

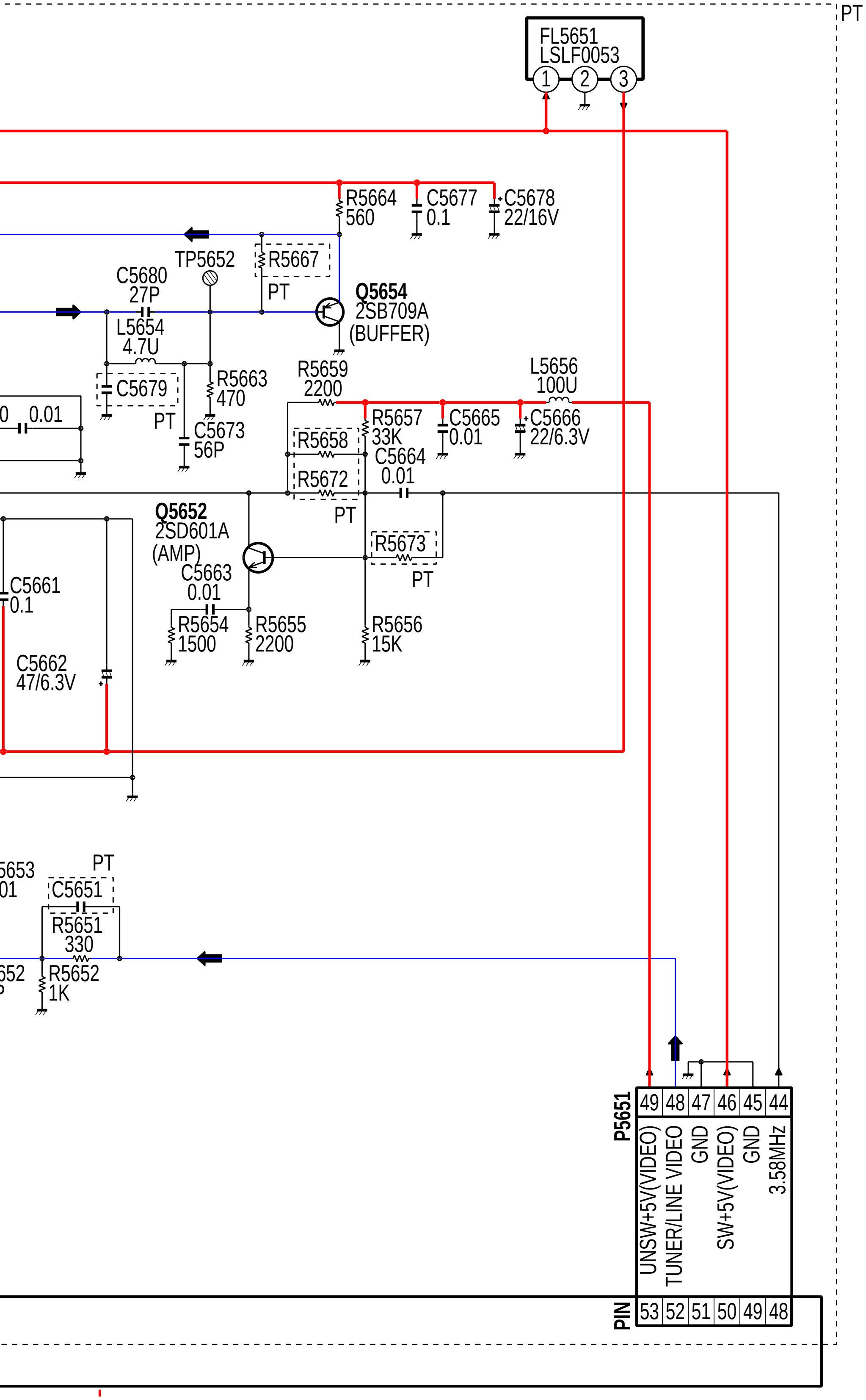
AUDIO SCHEMATIC II DIAGRAM


VIDEO SIGNAL
L5658
100U
L5657
100U
Q5656
2SD601A
(BUFFER)
R5661
390
C5680
27P
TP5
C5675
0.1
C5676
22/16V
PT
R5671
R5670
1K
L5654
4.7U
R5665
1K
L5653
100U
C5671
0.01
C5679
PT
TP5651
Q5655
2SD601A
(BUFFER)
R5660
820
C5670
0.01
Q5653
2SB709A
(BUFFER)
L5652
15U
R5662
390
PT
R5669
C5672
0.01
C5669
180P
C5668
0.01
R5666
560
C5674
39P
R5668
1K
C5657
0.1
Q5652
2SD60
(AMP)
C5656
47/6.3V
VDD
GND
Y/C
SEPARATION
C5661
0.1
IC5651
TC90A45F-ELP
(Y/C
SEPARATION)
C5662
47/6.3V
GND
VDD
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
C5658
0.01
C5659
0.01
C5660
0.01
C5654
1/50V
R5653
6800
C5653
0.01
PT
C5651
C5655
27P
Q5651
2SB709A
(BUFFER)
R5651
330
C5652
10P
R5652
1K
P5652
54
53
52
51
50
CHROMINANCE
GND
SW+9V
GND
LUMINANCE
PIN
58
57
56
55
54
MAIN C.B.A.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

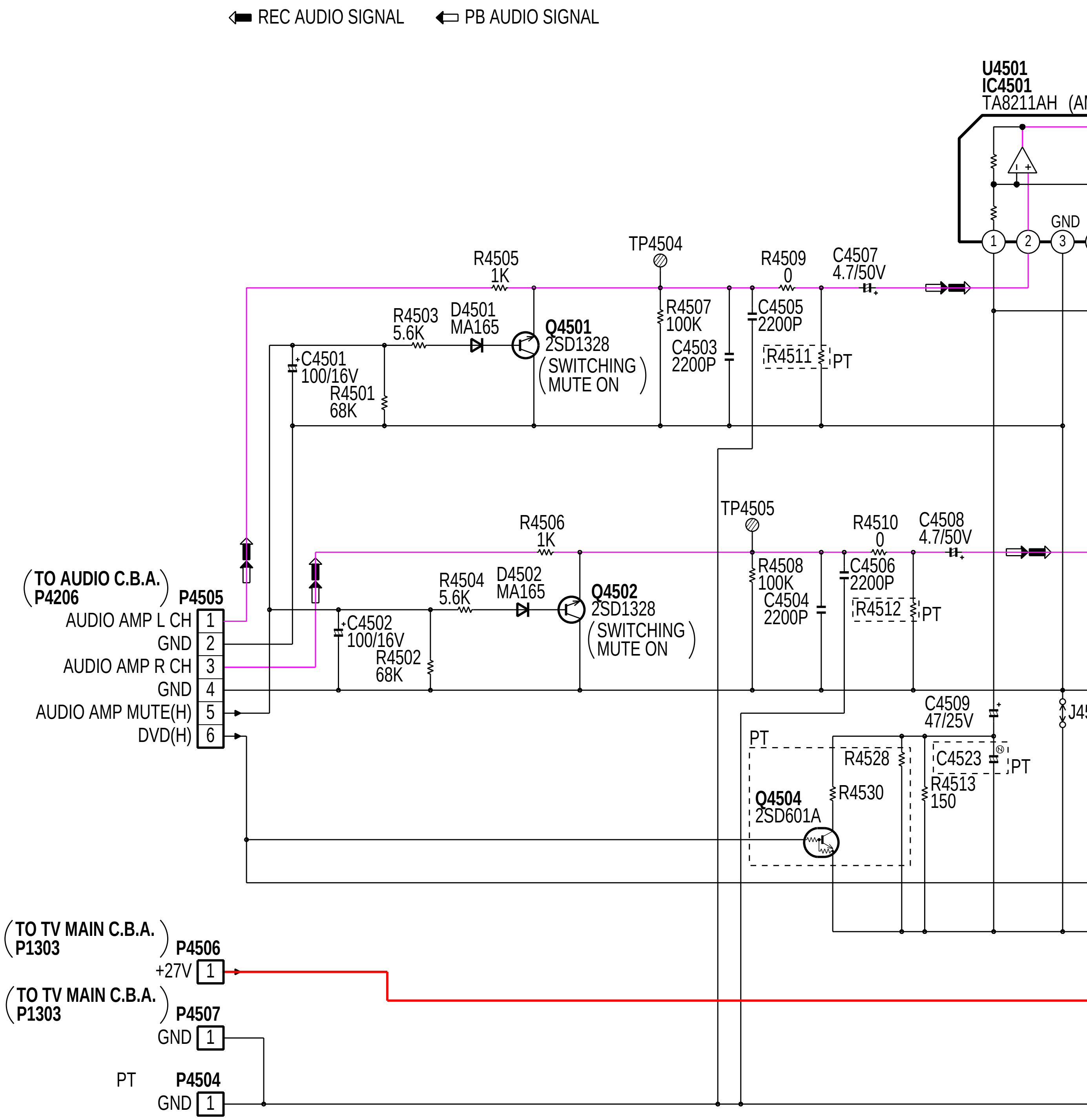
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



PT
FL5651
LSLF0053
1
2
3
R5664
560
C5677
0.1
C5678
22/16V
TP5652
R5667
PT
C5680
27P
Q5654
2SB709A
(BUFFER)
L5654
4.7U
C5679
PT
R5663
470
C5673
56P
0.01
R5659
2200
L5656
100U
R5657
33K
C5665
0.01
C5666
22/6.3V
R5658
C5664
0.01
R5672
PT
Q5652
2SD601A
(AMP)
R5673
PT
C5663
0.01
C5661
0.1
R5654
1500
R5655
2200
R5656
15K
C5662
47/6.3V
5653
01
PT
C5651
R5651
330
652
R5652
1K
P5651
49
48
47
46
45
44
UNSW+5V(VIDEO)
TUNER/LINE VIDEO
GND
SW+5V(VIDEO)
GND
3.58MHz
PIN
53
52
51
50
49
48

8.4. AUDIO AMP SCHEMATIC DIAGRAM

AUDIO AMP SCHEMATIC DIAGRAM

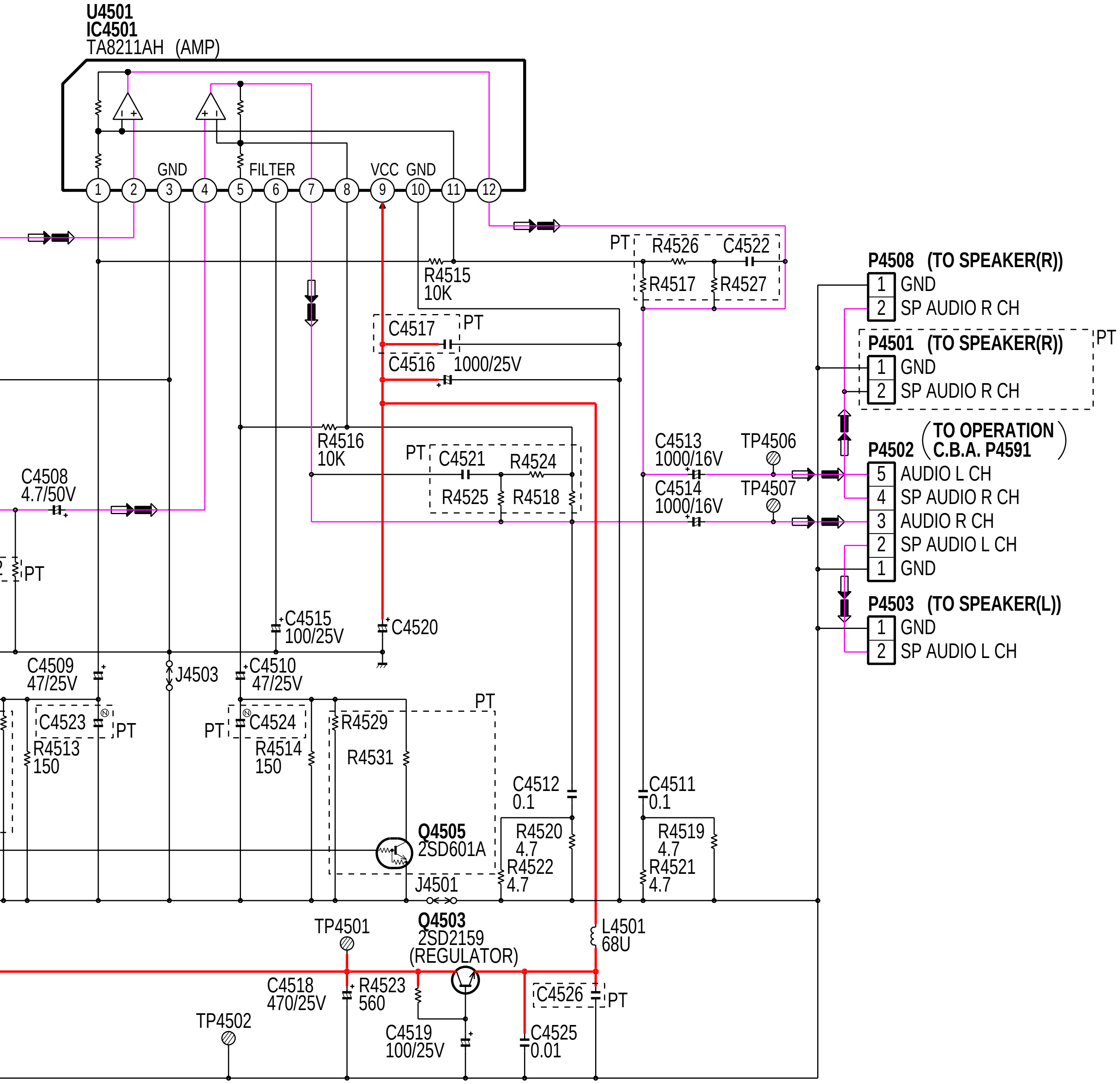


REC AUDIO SIGNAL
PB AUDIO SIGNAL
U4501
IC4501
TA8211AH (A
GND
1
2
3
TP4504
R4505
1K
R4509
0
C4507
4.7/50V
R4503
5.6K
D4501
MA165
Q4501
2SD1328
(SWITCHING MUTE ON)
R4507
100K
C4505
2200P
C4503
2200P
R4511
PT
C4501
100/16V
R4501
68K
TP4505
R4506
1K
R4510
0
C4508
4.7/50V
R4504
5.6K
D4502
MA165
Q4502
2SD1328
(SWITCHING MUTE ON)
R4508
100K
C4506
2200P
C4504
2200P
R4512
PT
C4502
100/16V
R4502
68K
(TO AUDIO C.B.A. P4206)
P4505
AUDIO AMP L CH 1
GND 2
AUDIO AMP R CH 3
GND 4
AUDIO AMP MUTE(H) 5
DVD(H) 6
C4509
47/25V
J45
PT
R4528
C4523
PT
R4530
R4513
150
Q4504
2SD601A
(TO TV MAIN C.B.A. P1303)
P4506
+27V 1
(TO TV MAIN C.B.A. P1303)
P4507
GND 1
PT
P4504
GND 1

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



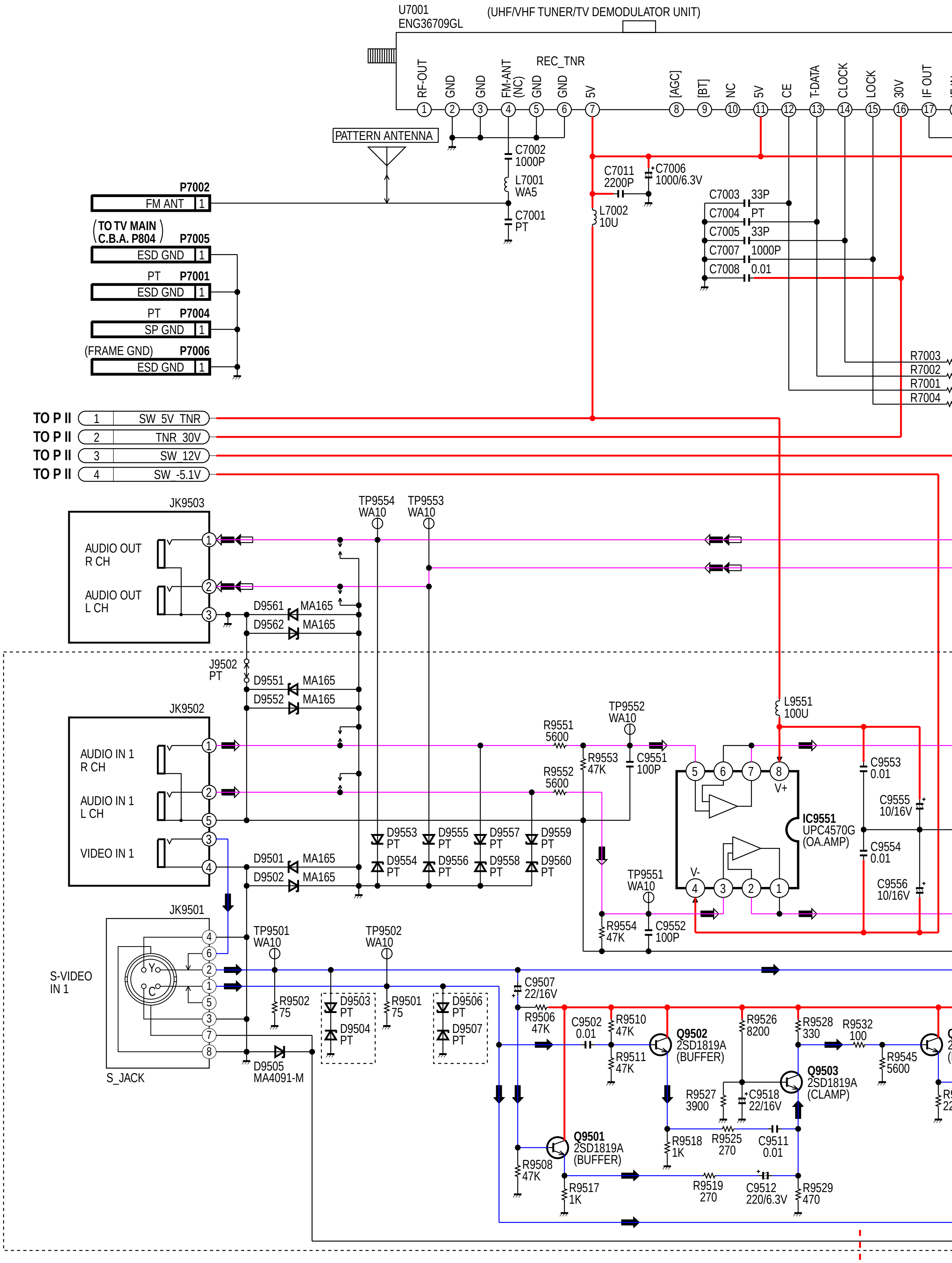
U4501
IC4501
TA8211AH (AMP)
GND
FILTER
VCC GND
1
2
3
4
5
6
7
8
9
10
11
12
PT
R4526
C4522
R4517
R4527
R4515
10K
C4517
PT
C4516
1000/25V
R4516
10K
PT
C4521
R4524
R4525
R4518
C4513
1000/16V
TP4506
C4514
1000/16V
TP4507
C4508
4.7/50V
PT
C4515
100/25V
C4520
C4509
47/25V
J4503
C4510
47/25V
PT
C4523
PT
R4513
150
PT
C4524
R4514
150
R4529
R4531
C4512
0.1
C4511
0.1
Q4505
2SD601A
R4520
4.7
R4522
4.7
R4519
4.7
R4521
4.7
J4501
TP4501
Q4503
2SD2159
(REGULATOR)
L4501
68U
C4518
470/25V
R4523
560
C4526
PT
TP4502
C4519
100/25V
C4525
0.01
P4508 (TO SPEAKER(R))
1 GND
2 SP AUDIO R CH
P4501 (TO SPEAKER(R))
PT
1 GND
2 SP AUDIO R CH
P4502 (TO OPERATION C.B.A. P4591)
5 AUDIO L CH
4 SP AUDIO R CH
3 AUDIO R CH
2 SP AUDIO L CH
1 GND
P4503 (TO SPEAKER(L))
1 GND
2 SP AUDIO L CH

LINK TO VOLTAGE CHART

VJBS4039
PV-DF2002
AUDIO AMP SCHEMATIC DIAGRAM

8.5. POWER SUPPLY SCHEMATIC DIAGRAM

POWER SUPPLY I SCHEMATIC DIAGRAM

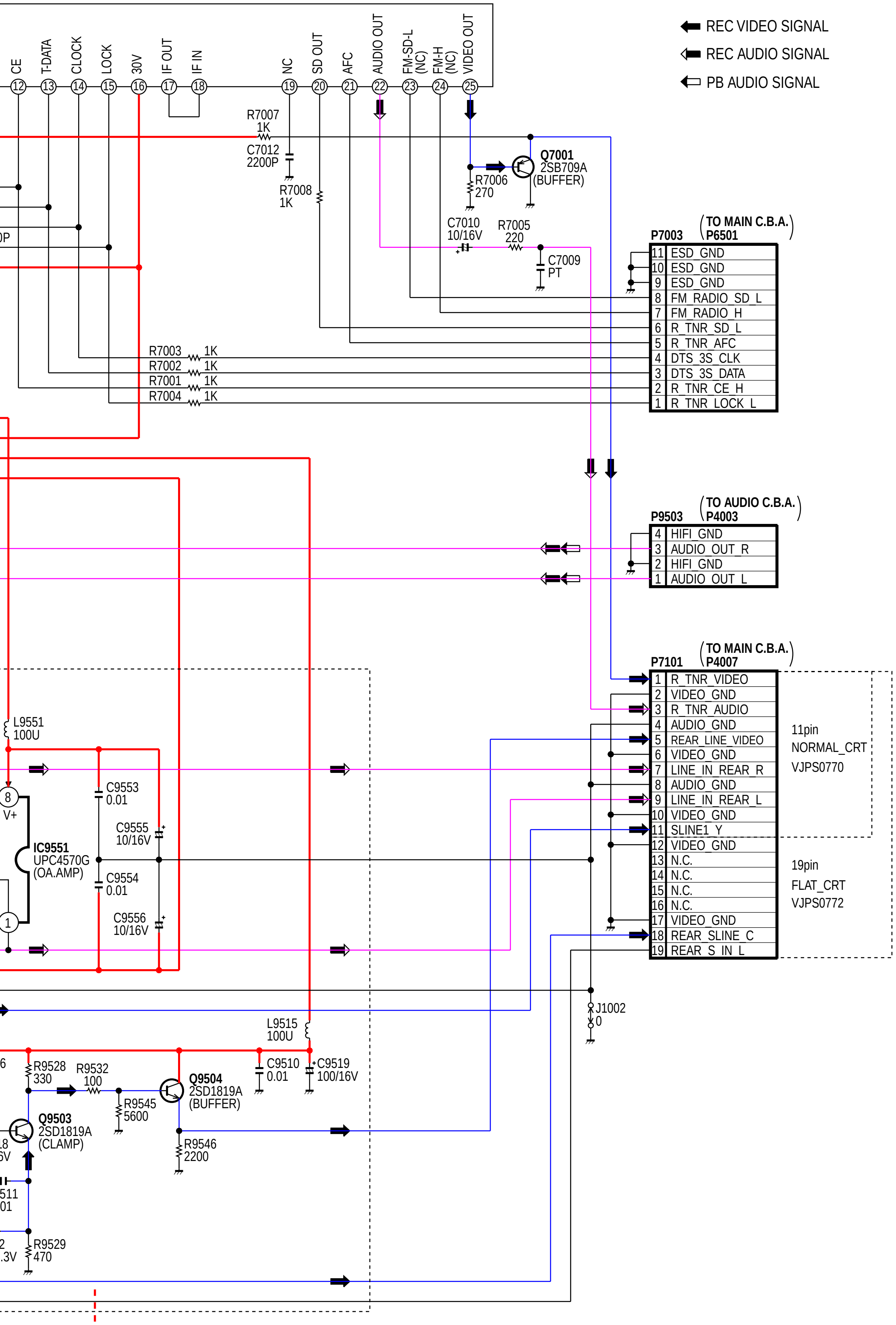


U7001
ENG36709GL
(UHF/VHF TUNER/TV DEMODULATOR UNIT)
RF-OUT
GND
GND
FM-ANT (NC)
GND
GND
REC_TNR
5V
[AGC]
[BT]
NC
5V
CE
T-DATA
CLOCK
LOCK
30V
IF OUT
PATTERN ANTENNA
C7002 1000P
L7001 WA5
C7001 PT
C7011 2200P
C7006 1000/6.3V
L7002 10U
C7003 33P
C7004 PT
C7005 33P
C7007 1000P
C7008 0.01
P7002
FM ANT
(TO TV MAIN C.B.A. P804)
P7005
ESD GND
PT P7001
ESD GND
PT P7004
SP GND
(FRAME GND) P7006
ESD GND
R7003
R7002
R7001
R7004
TO P II 1 SW 5V TNR
TO P II 2 TNR 30V
TO P II 3 SW 12V
TO P II 4 SW -5.1V
JK9503
AUDIO OUT R CH
AUDIO OUT L CH
TP9554 WA10
TP9553 WA10
D9561 MA165
D9562 MA165
J9502 PT
D9551 MA165
D9552 MA165
JK9502
AUDIO IN 1 R CH
AUDIO IN 1 L CH
VIDEO IN 1
D9501 MA165
D9502 MA165
R9551 5600
R9552 5600
R9553 47K
TP9552 WA10
C9551 100P
L9551 100U
D9553 PT
D9554 PT
D9555 PT
D9556 PT
D9557 PT
D9558 PT
D9559 PT
D9560 PT
V+
IC9551 UPC4570G (OA.AMP)
V-
C9553 0.01
C9555 10/16V
C9554 0.01
C9556 10/16V
TP9551 WA10
R9554 47K
C9552 100P
JK9501
S-VIDEO IN 1
S_JACK
TP9501 WA10
TP9502 WA10
R9502 75
R9501 75
D9503 PT
D9504 PT
D9506 PT
D9507 PT
D9505 MA4091-M
C9507 22/16V
R9506 47K
C9502 0.01
R9510 47K
R9511 47K
Q9502 2SD1819A (BUFFER)
R9526 8200
R9528 330
R9532 100
R9545 5600
Q9503 2SD1819A (CLAMP)
R9527 3900
C9518 22/16V
Q9501 2SD1819A (BUFFER)
R9508 47K
R9517 1K
R9518 1K
R9525 270
C9511 0.01
R9519 270
C9512 220/6.3V
R9529 470

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CE
T-DATA
CLOCK
LOCK
30V
IF OUT
IF IN
NC
SD OUT
AFC
AUDIO OUT
FM-SD-L (NC)
FM-H (NC)
VIDEO OUT
12
13
14
15
16
17
18
19
20
21
22
23
24
25
R7007 1K
C7012 2200P
R7008 1K
Q7001 2SB709A (BUFFER)
R7006 270
C7010 10/16V
R7005 220
C7009 PT
OP
P7003
TO MAIN C.B.A. P6501
11 ESD_GND
10 ESD_GND
9 ESD_GND
8 FM_RADIO_SD_L
7 FM_RADIO_H
6 R_TNR_SD_L
5 R_TNR_AFC
4 DTS_3S_CLK
3 DTS_3S_DATA
2 R_TNR_CE_H
1 R_TNR_LOCK_L
R7003 1K
R7002 1K
R7001 1K
R7004 1K
P9503
TO AUDIO C.B.A. P4003
4 HIFI_GND
3 AUDIO_OUT_R
2 HIFI_GND
1 AUDIO_OUT_L
P7101
TO MAIN C.B.A. P4007
1 R_TNR_VIDEO
2 VIDEO_GND
3 R_TNR_AUDIO
4 AUDIO_GND
5 REAR_LINE_VIDEO
6 VIDEO_GND
7 LINE_IN_REAR_R
8 AUDIO_GND
9 LINE_IN_REAR_L
10 VIDEO_GND
11 SLINE1_Y
12 VIDEO_GND
13 N.C.
14 N.C.
15 N.C.
16 N.C.
17 VIDEO_GND
18 REAR_SLINE_C
19 REAR_S_IN_L
11pin
NORMAL_CRT
VJPS0770
19pin
FLAT_CRT
VJPS0772
L9551 100U
8
V+
C9553 0.01
C9555 10/16V
IC9551 UPC4570G (OA.AMP)
C9554 0.01
C9556 10/16V
1
J1002 0
L9515 100U
6
R9528 330
R9532 100
Q9504 2SD1819A (BUFFER)
C9510 0.01
C9519 100/16V
R9545 5600
Q9503 2SD1819A (CLAMP)
R9546 2200
18
6V
511
01
2
.3V
R9529 470

LINK TO VOLTAGE CHART

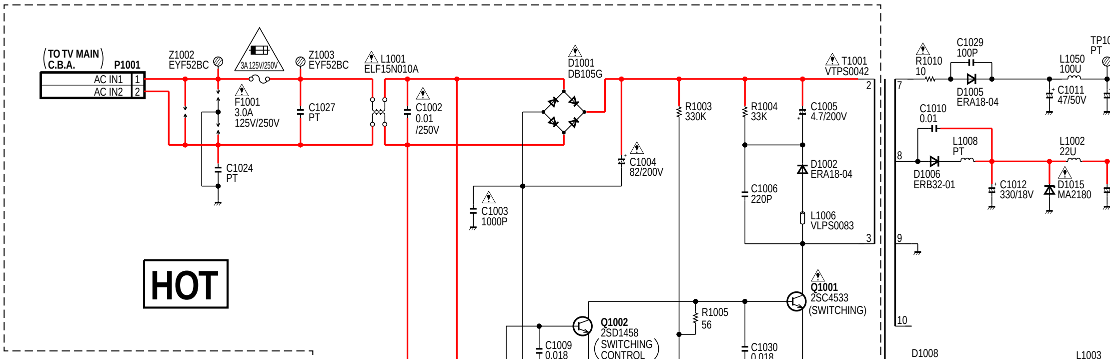
LSJB2066
PV-DF2002
POWER SUPPLY I SCHEMATIC DIAGRAM

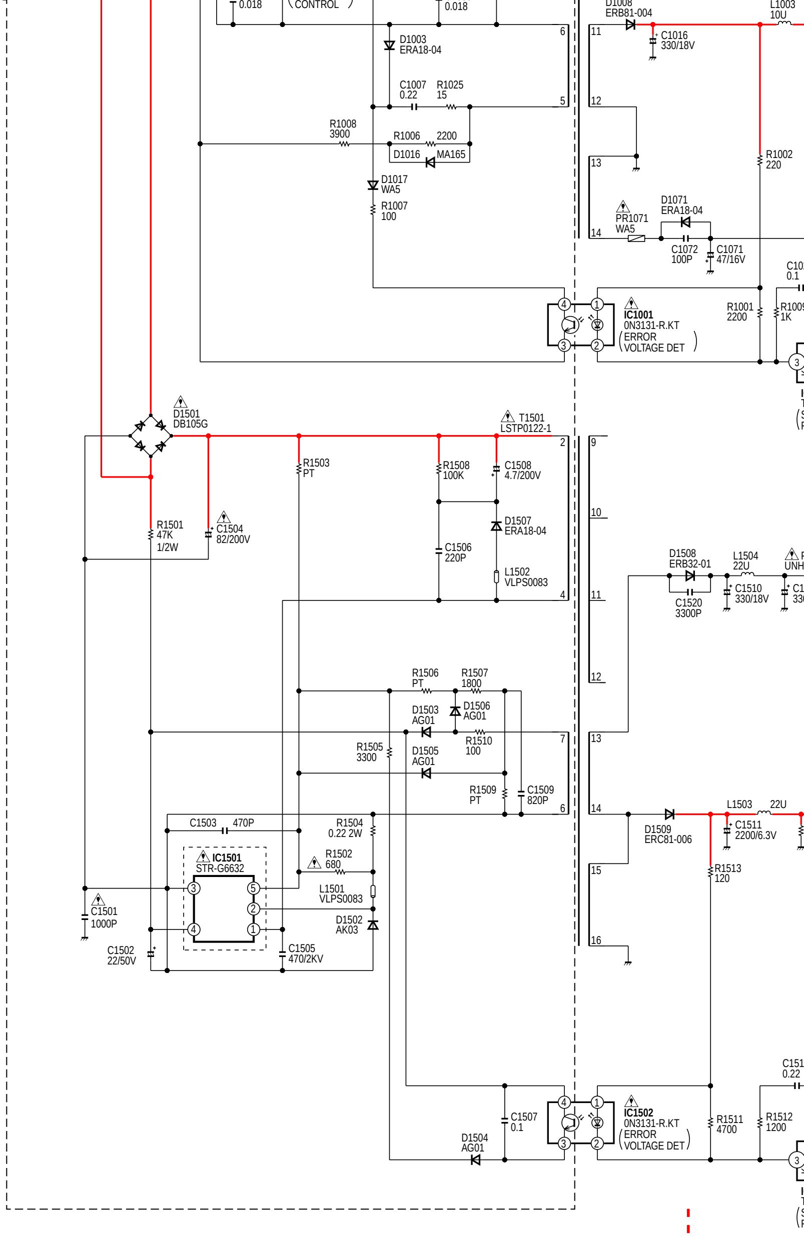
POWER SUPPLY II SCHEMATIC DIAGRAM

3A 125V/250V

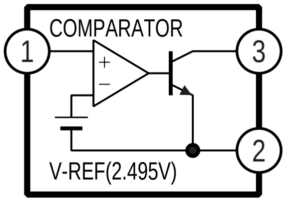
CAUTION: FOR CONTINUED PROTECTION AGAI
REPLACE ONLY WITH THE SAME TYP
ATTENTION: POUR UNE PROTECTION
D' INCENDIE N' UTILISERQUE DES FU
TYPE 3A 125V/250V

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

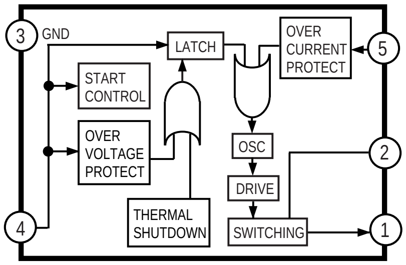

TO TV MAIN C.B.A.
P1001
AC IN1 1
AC IN2 2
Z1002 EYF52BC
3A 125V/250V
F1001 3.0A 125V/250V
Z1003 EYF52BC
C1027 PT
C1024 PT
L1001 ELF15N010A
C1002 0.01 /250V
C1003 1000P
D1001 DB105G
C1004 82/200V
R1003 330K
R1004 33K
C1005 4.7/200V
C1006 220P
D1002 ERA18-04
L1006 VLPS0083
T1001 VTPS0042
2
3
7
8
9
10
R1010 10
C1029 100P
D1005 ERA18-04
C1010 0.01
L1008 PT
D1006 ERB32-01
C1012 330/18V
L1050 100U
C1011 47/50V
L1002 22U
D1015 MA2180
TP10
PT
HOT
Q1001 2SC4533 (SWITCHING)
R1005 56
Q1002 2SD1458 (SWITCHING CONTROL)
C1009 0.018


C1030 0.018
D1003 ERA18-04
6
5
C1007 0.22
R1025 15
R1008 3900
R1006 2200
D1016 MA165
D1017 WA5
R1007 100
D1008 ERB81-004
C1016 330/18V
L1003 10U
11
12
13
14
R1002 220
PR1071 WA5
D1071 ERA18-04
C1072 100P
C1071 47/16V
C10 0.1
IC1001 0N3131-R.KT (ERROR VOLTAGE DET)
R1001 2200
R100 1K
D1501 DB105G
T1501 LSTP0122-1
R1503 PT
R1508 100K
C1508 4.7/200V
C1506 220P
D1507 ERA18-04
L1502 VLPS0083
R1501 47K 1/2W
C1504 82/200V
D1508 ERB32-01
L1504 22U
C1520 3300P
C1510 330/18V
R1506 PT
R1507 1800
D1503 AG01
D1506 AG01
R1510 100
R1505 3300
D1505 AG01
R1509 PT
C1509 820P
C1503 470P
R1504 0.22 2W
IC1501 STR-G6632
R1502 680
L1501 VLPS0083
D1502 AK03
C1501 1000P
C1502 22/50V
C1505 470/2KV
L1503 22U
D1509 ERC81-006
C1511 2200/6.3V
R1513 120
C151 0.22
C1507 0.1
D1504 AG01
IC1502 0N3131-R.KT (ERROR VOLTAGE DET)
R1511 4700
R1512 1200
15
16

IC1002,IC1503 SHUNT REGULATOR IC- DETAIL BLOCK DIAGRAM


COMPARATOR
1
3
2
+
−
V-REF(2.495V)

IC1501 SWITCHING CONTROL IC- DETAIL BLOCK DIAGRAM


3
GND
LATCH
OVER CURRENT PROTECT
5
START CONTROL
OVER VOLTAGE PROTECT
OSC
2
DRIVE
4
THERMAL SHUTDOWN
SWITCHING
1

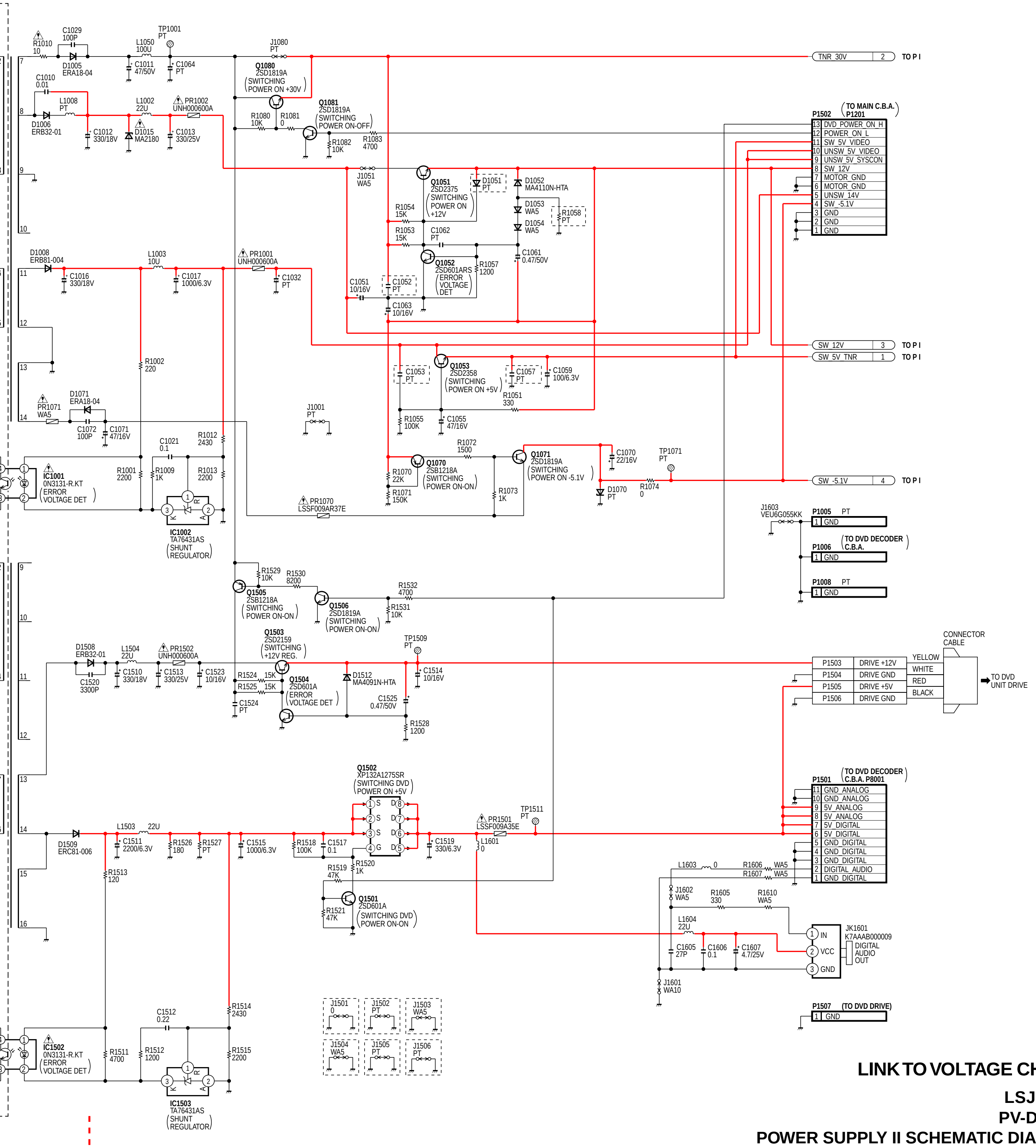
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

R CONTINUED PROTECTION AGAINST FIRE HAZARD,
PLACE ONLY WITH THE SAME TYPE 3A 125V/250V FUSE.
ENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
NCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
E 3A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



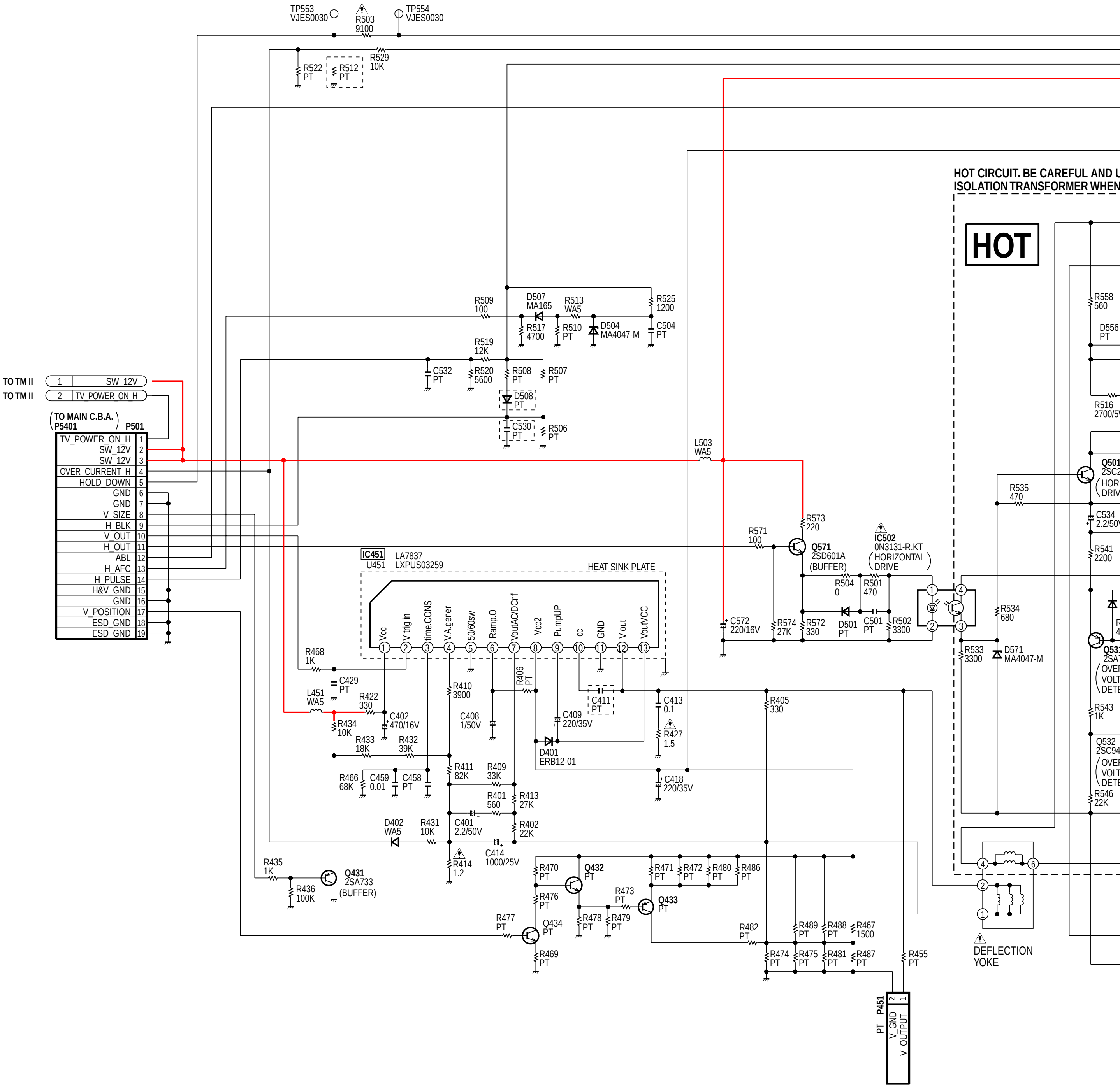
R1010 10
C1029 100P
D1005 ERA18-04
L1050 100U
TP1001 PT
C1011 47/50V
C1064 PT
J1080 PT
Q1080 2SD1819A SWITCHING POWER ON +30V
TNR_30V 2 TO P I
C1010 0.01
L1008 PT
L1002 22U
PR1002 UNH000600A
D1006 ERB32-01
C1012 330/18V
D1015 MA2180
C1013 330/25V
Q1081 2SD1819A SWITCHING POWER ON-OFF
R1080 10K
R1081 0
R1082 10K
R1083 4700
TO MAIN C.B.A. P1201
P1502
13 DVD_POWER_ON_H
12 POWER_ON_L
11 SW_5V_VIDEO
10 UNSW_5V_VIDEO
9 UNSW_5V_SYSCON
8 SW_12V
7 MOTOR_GND
6 MOTOR_GND
5 UNSW_14V
4 SW_-5.1V
3 GND
2 GND
1 GND
J1051 WA5
Q1051 2SD2375 SWITCHING POWER ON +12V
D1051 PT
D1052 MA4110N-HTA
D1053 WA5
D1054 WA5
R1058 PT
R1054 15K
R1053 15K
C1062 PT
C1061 0.47/50V
Q1052 2SD601ARS ERROR VOLTAGE DET
R1057 1200
D1008 ERB81-004
L1003 10U
PR1001 UNH000600A
C1016 330/18V
C1017 1000/6.3V
C1032 PT
C1051 10/16V
C1052 PT
C1063 10/16V
SW_12V 3 TO P I
SW_5V_TNR 1 TO P I
R1002 220
Q1053 2SD2358 SWITCHING POWER ON +5V
C1053 PT
C1057 PT
C1059 100/6.3V
R1051 330
PR1071 WA5
D1071 ERA18-04
C1072 100P
C1071 47/16V
J1001 PT
R1055 100K
C1055 47/16V
C1021 0.1
R1012 2430
R1072 1500
Q1071 2SD1819A SWITCHING POWER ON -5.1V
C1070 22/16V
TP1071 PT
IC1001 0N3131-R.KT ERROR VOLTAGE DET
R1001 2200
R1009 1K
R1013 2200
Q1070 2SB1218A SWITCHING POWER ON-ON
R1070 22K
R1071 150K
R1073 1K
D1070 PT
R1074 0
SW_-5.1V 4 TO P I
PR1070 LSSF009AR37E
IC1002 TA76431AS SHUNT REGULATOR
J1603 VEU6G055KK
P1005 PT 1 GND
P1006 TO DVD DECODER C.B.A. 1 GND
P1008 PT 1 GND
R1529 10K
R1530 8200
R1532 4700
Q1505 2SB1218A SWITCHING POWER ON-ON
Q1506 2SD1819A SWITCHING POWER ON-ON
R1531 10K
Q1503 2SD2159 SWITCHING +12V REG.
TP1509 PT
D1508 ERB32-01
L1504 22U
PR1502 UNH000600A
C1520 3300P
C1510 330/18V
C1513 330/25V
C1523 10/16V
R1524 15K
R1525 15K
C1524 PT
Q1504 2SD601A ERROR VOLTAGE DET
D1512 MA4091N-HTA
C1514 10/16V
C1525 0.47/50V
R1528 1200
CONNECTOR CABLE
P1503 DRIVE +12V YELLOW
P1504 DRIVE GND WHITE
P1505 DRIVE +5V RED
P1506 DRIVE GND BLACK
TO DVD UNIT DRIVE
Q1502 XP132A1275SR SWITCHING DVD POWER ON +5V
P1501 TO DVD DECODER C.B.A. P8001
11 GND_ANALOG
10 GND_ANALOG
9 5V_ANALOG
8 5V_ANALOG
7 5V_DIGITAL
6 5V_DIGITAL
5 GND_DIGITAL
4 GND_DIGITAL
3 GND_DIGITAL
2 DIGITAL_AUDIO
1 GND_DIGITAL
D1509 ERC81-006
L1503 22U
C1511 2200/6.3V
R1526 180
R1527 PT
C1515 1000/6.3V
R1518 100K
C1517 0.1
C1519 330/6.3V
PR1501 LSSF009A35E
TP1511 PT
L1601 0
R1513 120
R1519 47K
R1520 1K
Q1501 2SD601A SWITCHING DVD POWER ON-ON
R1521 47K
L1603 0
R1606 WA5
R1607 WA5
J1602 WA5
R1605 330
R1610 WA5
L1604 22U
C1605 27P
C1606 0.1
C1607 4.7/25V
JK1601 K7AAAB000009 DIGITAL AUDIO OUT
1 IN
2 VCC
3 GND
J1601 WA10
P1507 (TO DVD DRIVE) 1 GND
C1512 0.22
R1514 2430
J1501 0
J1502 PT
J1503 WA5
J1504 WA5
J1505 PT
J1506 PT
IC1502 0N3131-R.KT ERROR VOLTAGE DET
R1511 4700
R1512 1200
R1515 2200
IC1503 TA76431AS SHUNT REGULATOR

LINK TO VOLTAGE CHART

LSJB2066
PV-DF2002
POWER SUPPLY II SCHEMATIC DIAGRAM

8.6. TV MAIN SCHEMATIC DIAGRAMS

TV MAIN I SCHEMATIC DIAGRAM

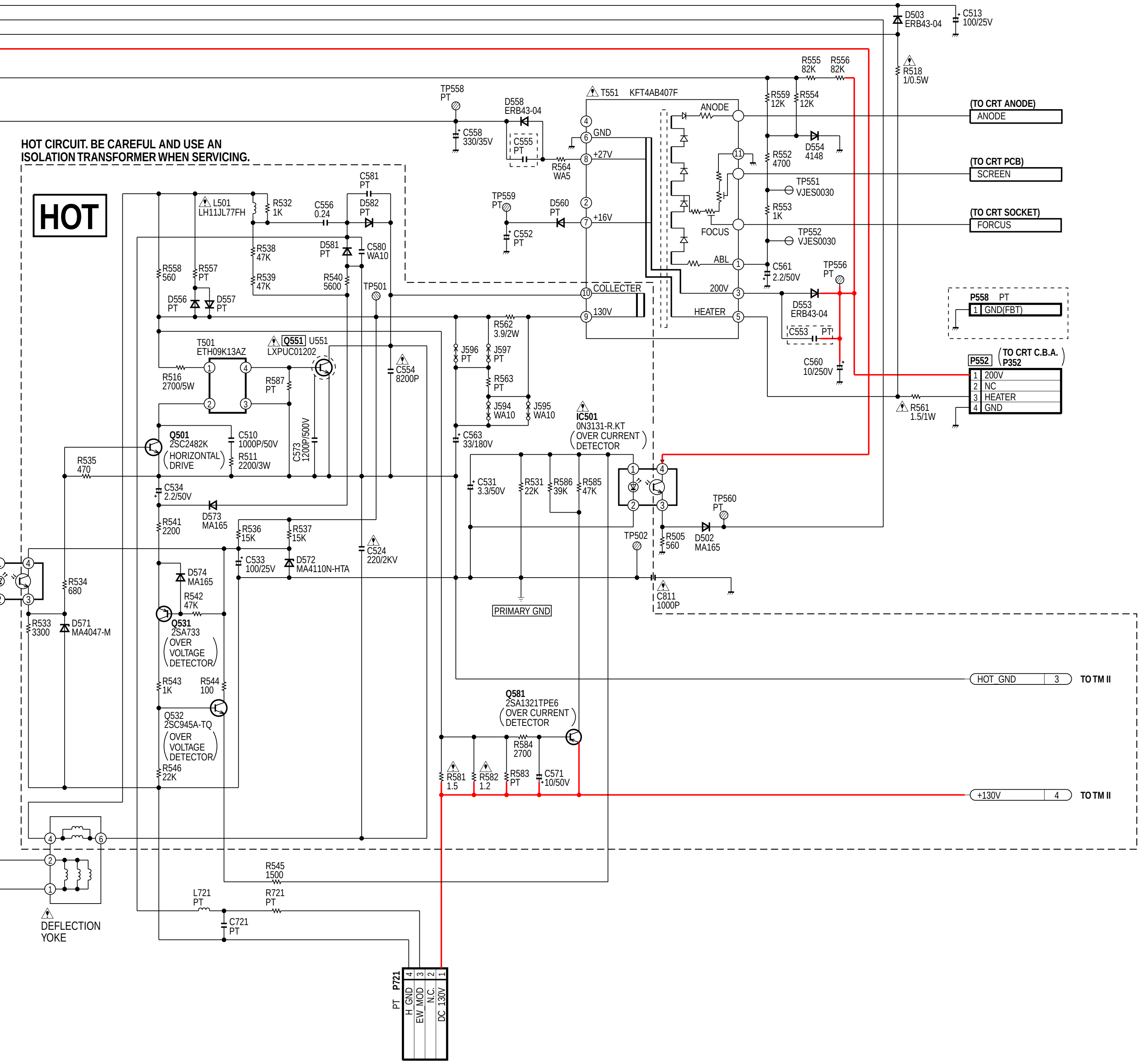

TP553 VJES0030
R503 9100
TP554 VJES0030
R529 10K
R522 PT
R512 PT
HOT CIRCUIT. BE CAREFUL AND U
ISOLATION TRANSFORMER WHEN
HOT
R509 100
D507 MA165
R513 WA5
R525 1200
R517 4700
R510 PT
D504 MA4047-M
C504 PT
R558 560
D556 PT
R519 12K
C532 PT
R520 5600
R508 PT
R507 PT
D508 PT
C530 PT
R506 PT
R516 2700/5
TO TM II
1 SW_12V
2 TV_POWER_ON_H
TO MAIN C.B.A. P5401
P501
TV_POWER_ON_H 1
SW_12V 2
SW_12V 3
OVER_CURRENT_H 4
HOLD_DOWN 5
GND 6
GND 7
V_SIZE 8
H_BLK 9
V_OUT 10
H_OUT 11
ABL 12
H_AFC 13
H_PULSE 14
H&V_GND 15
GND 16
V_POSITION 17
ESD_GND 18
ESD_GND 19
L503 WA5
Q501 2SC2
HOR DRIV
R535 470
C534 2.2/50
R541 2200
R573 220
R571 100
Q571 2SD601A (BUFFER)
IC502 0N3131-R.KT HORIZONTAL DRIVE
IC451 LA7837
U451 LXPUS03259
HEAT SINK PLATE
Vcc 1
V trig in 2
time.CONS 3
V.A.gener 4
50/60sw 5
Ramp.O 6
VoutAC/DCnf 7
Vcc2 8
PumpUP 9
cc 10
GND 11
V out 12
VoutVCC 13
R504 0
R501 470
D501 PT
C501 PT
R502 3300
C572 220/16V
R574 27K
R572 330
R534 680
R533 3300
D571 MA4047-M
Q531 2SA
OVER VOLT DETE
R543 1K
Q532 2SC94
OVER VOLT DETE
R546 22K
R468 1K
C429 PT
L451 WA5
R422 330
C402 470/16V
R434 10K
R410 3900
C408 1/50V
R406 PT
C411 PT
C413 0.1
R405 330
C409 220/35V
R427 1.5
D401 ERB12-01
R433 18K
R432 39K
R466 68K
C459 0.01
C458 PT
R411 82K
R409 33K
C418 220/35V
R401 560
R413 27K
C401 2.2/50V
R402 22K
D402 WA5
R431 10K
C414 1000/25V
R414 1.2
R435 1K
Q431 2SA733 (BUFFER)
R436 100K
R470 PT
Q432 PT
R471 PT
R472 PT
R480 PT
R486 PT
R476 PT
R473 PT
Q433 PT
R477 PT
Q434 PT
R478 PT
R479 PT
R482 PT
R489 PT
R488 PT
R467 1500
R469 PT
R474 PT
R475 PT
R481 PT
R487 PT
R455 PT
PT P451
2 V_GND
1 V_OUTPUT
DEFLECTION YOKE

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

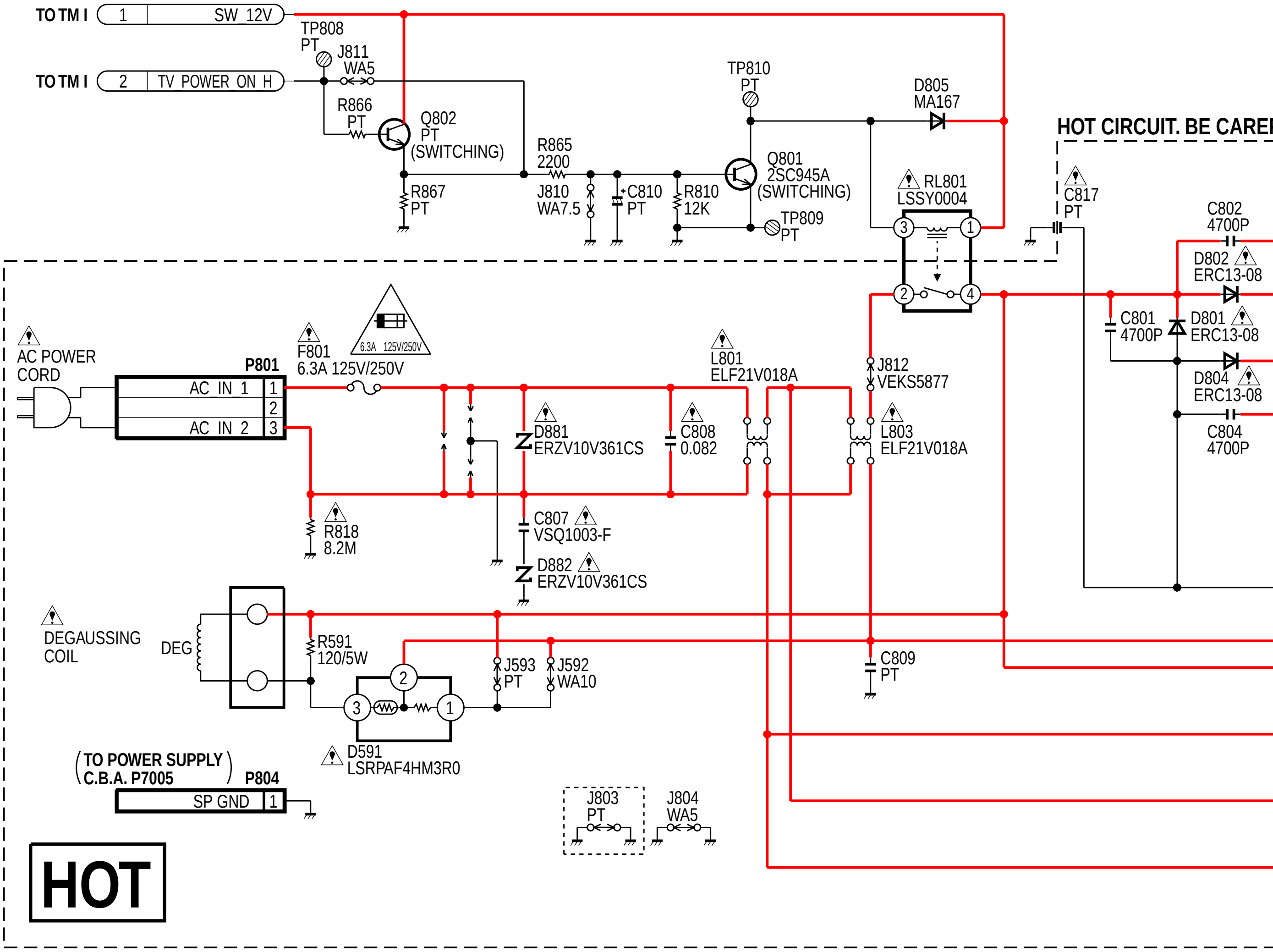

HOT CIRCUIT. BE CAREFUL AND USE AN
ISOLATION TRANSFORMER WHEN SERVICING.
HOT
D503 ERB43-04
C513 100/25V
R555 82K
R556 82K
R518 1/0.5W
TP558 PT
D558 ERB43-04
T551 KFT4AB407F
R559 12K
R554 12K
ANODE
(TO CRT ANODE)
ANODE
C558 330/35V
C555 PT
GND
+27V
R564 WA5
R552 4700
D554 4148
(TO CRT PCB)
SCREEN
TP551 VJES0030
C581 PT
L501 LH11JL77FH
R532 1K
C556 0.24
D582 PT
TP559 PT
D560 PT
+16V
R553 1K
(TO CRT SOCKET)
FORCUS
FOCUS
TP552 VJES0030
R538 47K
D581 PT
C580 WA10
C552 PT
ABL
C561 2.2/50V
TP556 PT
R558 560
R557 PT
R539 47K
R540 5600
TP501
COLLECTER
200V
D556 PT
D557 PT
130V
HEATER
D553 ERB43-04
P558 PT
1 GND(FBT)
R562 3.9/2W
C553 PT
T501 ETH09K13AZ
Q551 U551 LXPUC01202
J596 PT
J597 PT
C554 8200P
C560 10/250V
R516 2700/5W
R587 PT
R563 PT
P552 (TO CRT C.B.A. P352)
1 200V
2 NC
3 HEATER
4 GND
J594 WA10
J595 WA10
R561 1.5/1W
C573 1200P/500V
IC501 0N3131-R.KT (OVER CURRENT DETECTOR)
Q501 2SC2482K (HORIZONTAL DRIVE)
C510 1000P/50V
R511 2200/3W
C563 33/180V
R535 470
C534 2.2/50V
C531 3.3/50V
R531 22K
R586 39K
R585 47K
TP560 PT
D573 MA165
R541 2200
R536 15K
R537 15K
C524 220/2KV
TP502
R505 560
D502 MA165
C533 100/25V
D572 MA4110N-HTA
R534 680
D574 MA165
R542 47K
C811 1000P
PRIMARY GND
R533 3300
D571 MA4047-M
Q531 2SA733 (OVER VOLTAGE DETECTOR)
R543 1K
R544 100
HOT_GND 3 TO TM II
Q532 2SC945A-TQ (OVER VOLTAGE DETECTOR)
Q581 2SA1321TPE6 (OVER CURRENT DETECTOR)
R584 2700
R546 22K
R581 1.5
R582 1.2
R583 PT
C571 10/50V
+130V 4 TO TM II
R545 1500
L721 PT
R721 PT
C721 PT
DEFLECTION YOKE
PT P721
4 H GND
3 EW MOD
2 N.C.
1 DC 130V

LINK TO VOLTAGE CHART

LSJB2065
PV-DF2002
TV MAIN I SCHEMATIC DIAGRAM

TV MAIN II SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST
REPLACE ONLY WITH THE SAME TYPE 6
ATTENTION: POUR UNE PROTECTION C
D' INCENDIE N' UTILISERQUE DES FUSIE
TYPE 6.3A 125V/250V



TO TM I
1
SW_12V
TO TM I
2
TV_POWER_ON_H
TP808
PT
J811
WA5
R866
PT
Q802
PT
(SWITCHING)
R867
PT
R865
2200
J810
WA7.5
C810
PT
R810
12K
TP810
PT
Q801
2SC945A
(SWITCHING)
TP809
PT
D805
MA167
RL801
LSSY0004
HOT CIRCUIT. BE CAREI
C817
PT
C802
4700P
D802
ERC13-08
C801
4700P
D801
ERC13-08
D804
ERC13-08
C804
4700P
AC POWER
CORD
P801
AC_IN_1
AC_IN_2
F801
6.3A 125V/250V
6.3A 125V/250V
D881
ERZV10V361CS
C808
0.082
L801
ELF21V018A
J812
VEKS5877
L803
ELF21V018A
R818
8.2M
C807
VSQ1003-F
D882
ERZV10V361CS
DEGAUSSING
COIL
DEG
R591
120/5W
J593
PT
J592
WA10
C809
PT
D591
LSRPAF4HM3R0
TO POWER SUPPLY
C.B.A. P7005
P804
SP GND
J803
PT
J804
WA5
HOT

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

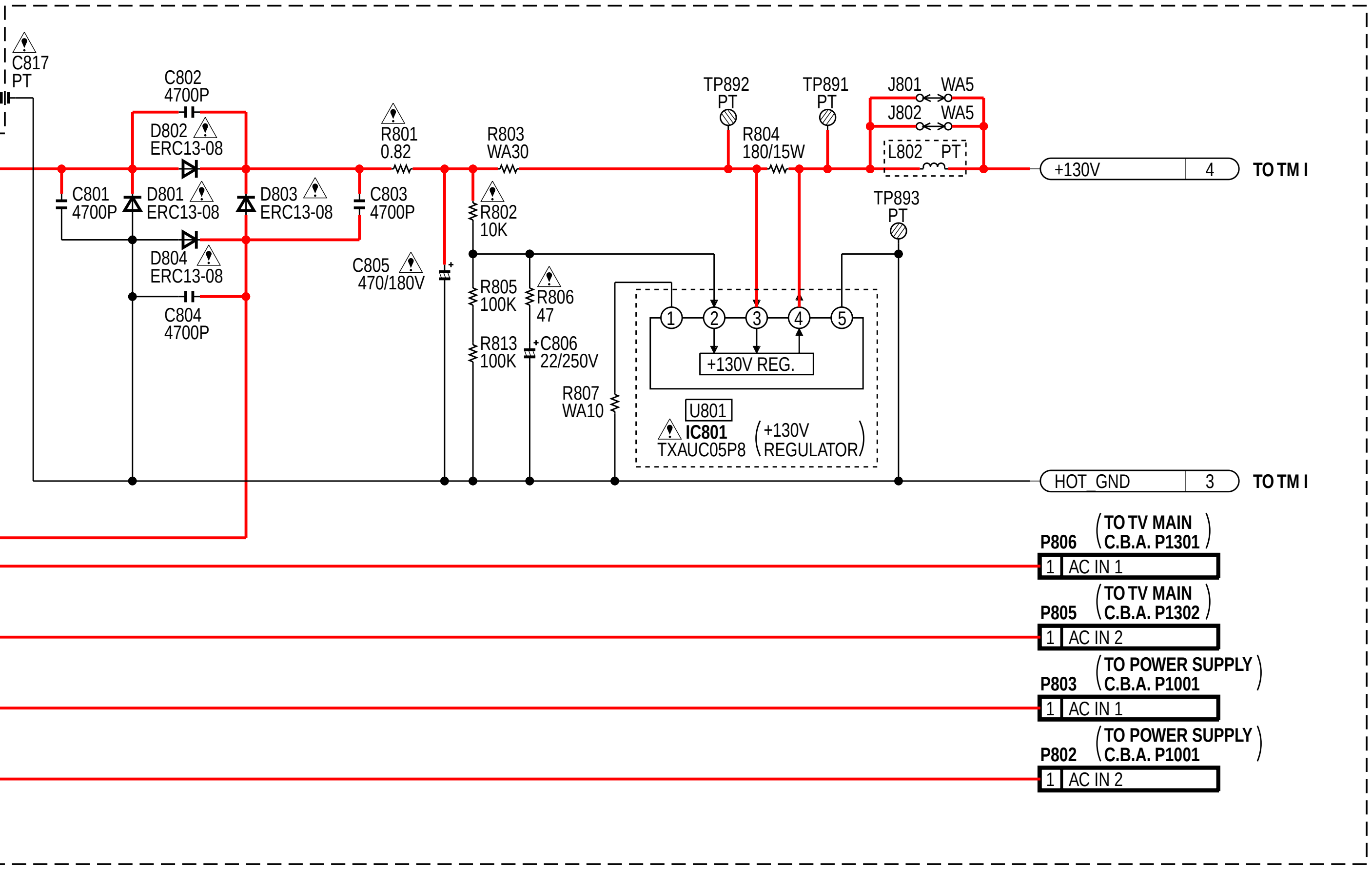
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

ONTINUED PROTECTION AGAINST FIRE HAZARD,
CE ONLY WITH THE SAME TYPE 6.3A 125V/250V FUSE.
TION: POUR UNE PROTECTION CONTINUE LES RISQUES
ENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
.3A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

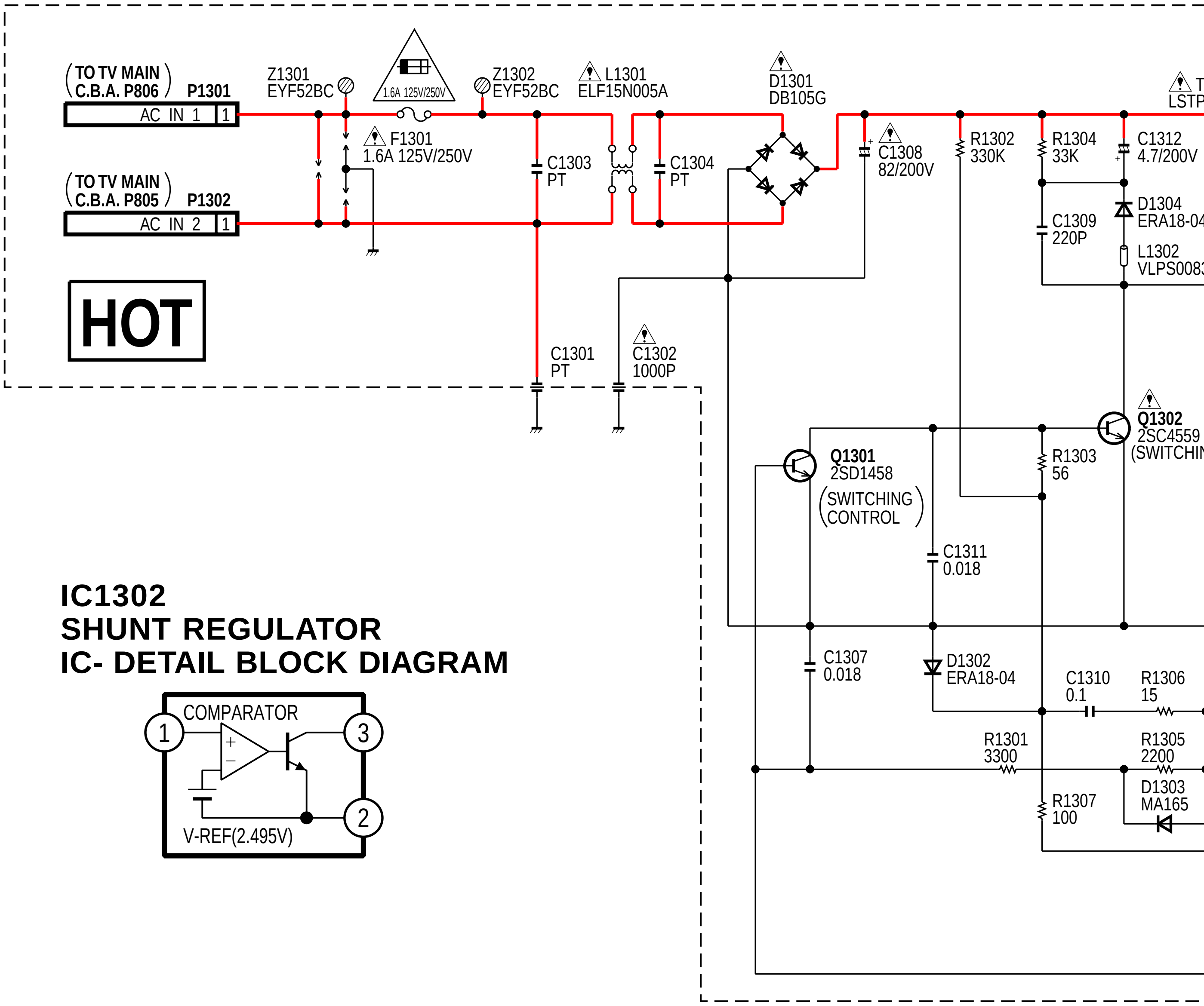

C817
PT
C802
4700P
D802
ERC13-08
C801
4700P
D801
ERC13-08
D803
ERC13-08
C803
4700P
D804
ERC13-08
C804
4700P
R801
0.82
R803
WA30
R802
10K
C805
470/180V
R805
100K
R806
47
R813
100K
C806
22/250V
R807
WA10
TP892
PT
R804
180/15W
TP891
PT
J801
WA5
J802
WA5
L802
PT
TP893
PT
1
2
3
4
5
+130V REG.
U801
IC801
TXAUC05P8
+130V
REGULATOR
+130V
4
TO TM I
HOT GND
3
TO TM I
P806
TO TV MAIN
C.B.A. P1301
1
AC IN 1
P805
TO TV MAIN
C.B.A. P1302
1
AC IN 2
P803
TO POWER SUPPLY
C.B.A. P1001
1
AC IN 1
P802
TO POWER SUPPLY
C.B.A. P1001
1
AC IN 2

LINK TO VOLTAGE CHART

TV MAIN III SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION A
REPLACE ONLY WITH THE SAME
ATTENTION: POUR UNE PROTEC
D'T INCENDIE N'I UTILISERQUE D
TYPE 1.6A 125/250V

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.


1.6A 125/250V
TO TV MAIN C.B.A. P806
P1301
AC IN 1
1
TO TV MAIN C.B.A. P805
P1302
AC IN 2
1
HOT
Z1301
EYF52BC
1.6A 125V/250V
F1301
1.6A 125V/250V
Z1302
EYF52BC
L1301
ELF15N005A
C1303
PT
C1304
PT
D1301
DB105G
C1308
82/200V
R1302
330K
R1304
33K
C1312
4.7/200V
T
LSTP
C1309
220P
D1304
ERA18-04
L1302
VLPS008
C1301
PT
C1302
1000P
Q1302
2SC4559
(SWITCHIN
Q1301
2SD1458
(SWITCHING CONTROL)
R1303
56
C1311
0.018
C1307
0.018
D1302
ERA18-04
C1310
0.1
R1306
15
R1301
3300
R1305
2200
D1303
MA165
R1307
100
COMPARATOR
1
3
2
+
−
V-REF(2.495V)

IC1302
SHUNT REGULATOR
IC- DETAIL BLOCK DIAGRAM

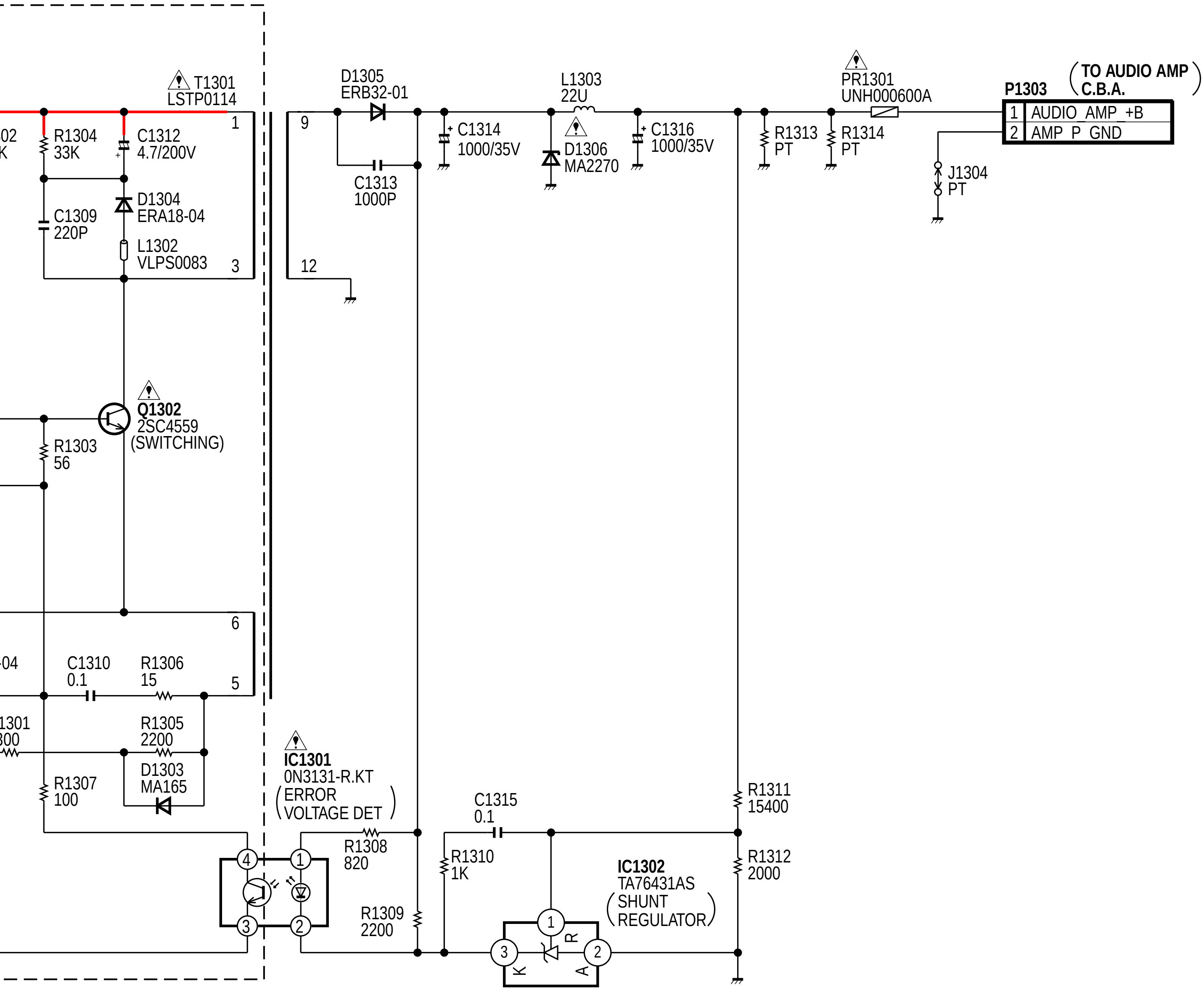
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

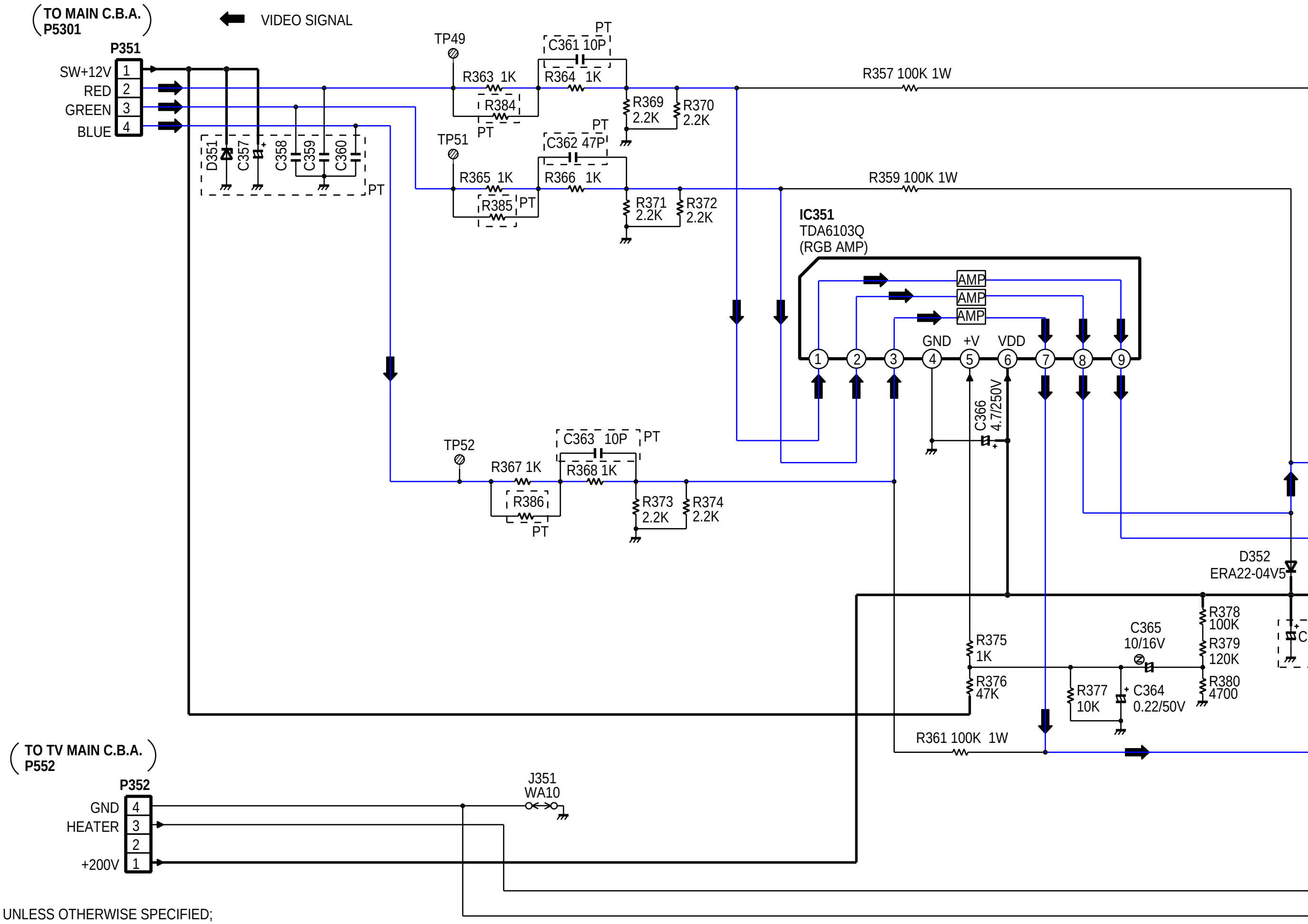

T1301
LSTP0114
R1304
33K
C1312
4.7/200V
C1309
220P
D1304
ERA18-04
L1302
VLPS0083
1
3
9
12
D1305
ERB32-01
C1313
1000P
C1314
1000/35V
L1303
22U
D1306
MA2270
C1316
1000/35V
R1313
PT
R1314
PT
PR1301
UNH000600A
P1303
TO AUDIO AMP
C.B.A.
1 AUDIO_AMP_+B
2 AMP_P_GND
J1304
PT
Q1302
2SC4559
(SWITCHING)
R1303
56
6
5
C1310
0.1
R1306
15
R1305
2200
D1303
MA165
R1307
100
IC1301
0N3131-R.KT
ERROR
VOLTAGE DET
R1308
820
R1309
2200
4
1
3
2
C1315
0.1
R1310
1K
IC1302
TA76431AS
SHUNT
REGULATOR
R
K
A
R1311
15400
R1312
2000
02
K
-04
1301
300

LINK TO VOLTAGE CHART

LSJB2065
PV-DF2002
TV MAIN III SCHEMATIC DIAGRAM

8.7. CRT SCHEMATIC DIAGRAM

CRT SCHEMATIC DIAGRAM


TO MAIN C.B.A.
P5301
P351
SW+12V 1
RED 2
GREEN 3
BLUE 4
VIDEO SIGNAL
D351
C357
C358
C359
C360
PT
TP49
TP51
TP52
R363 1K
R384
C361 10P
R364 1K
R369 2.2K
R370 2.2K
C362 47P
R365 1K
R385
R366 1K
R371 2.2K
R372 2.2K
R357 100K 1W
R359 100K 1W
IC351
TDA6103Q
(RGB AMP)
AMP
AMP
AMP
GND
+V
VDD
1
2
3
4
5
6
7
8
9
C366
4.7/250V
C363 10P
R367 1K
R368 1K
R386
R373 2.2K
R374 2.2K
D352
ERA22-04V5
R378 100K
R379 120K
R380 4700
C365 10/16V
C364 0.22/50V
R375 1K
R376 47K
R377 10K
R361 100K 1W
TO TV MAIN C.B.A.
P552
P352
GND 4
HEATER 3
2
+200V 1
J351
WA10

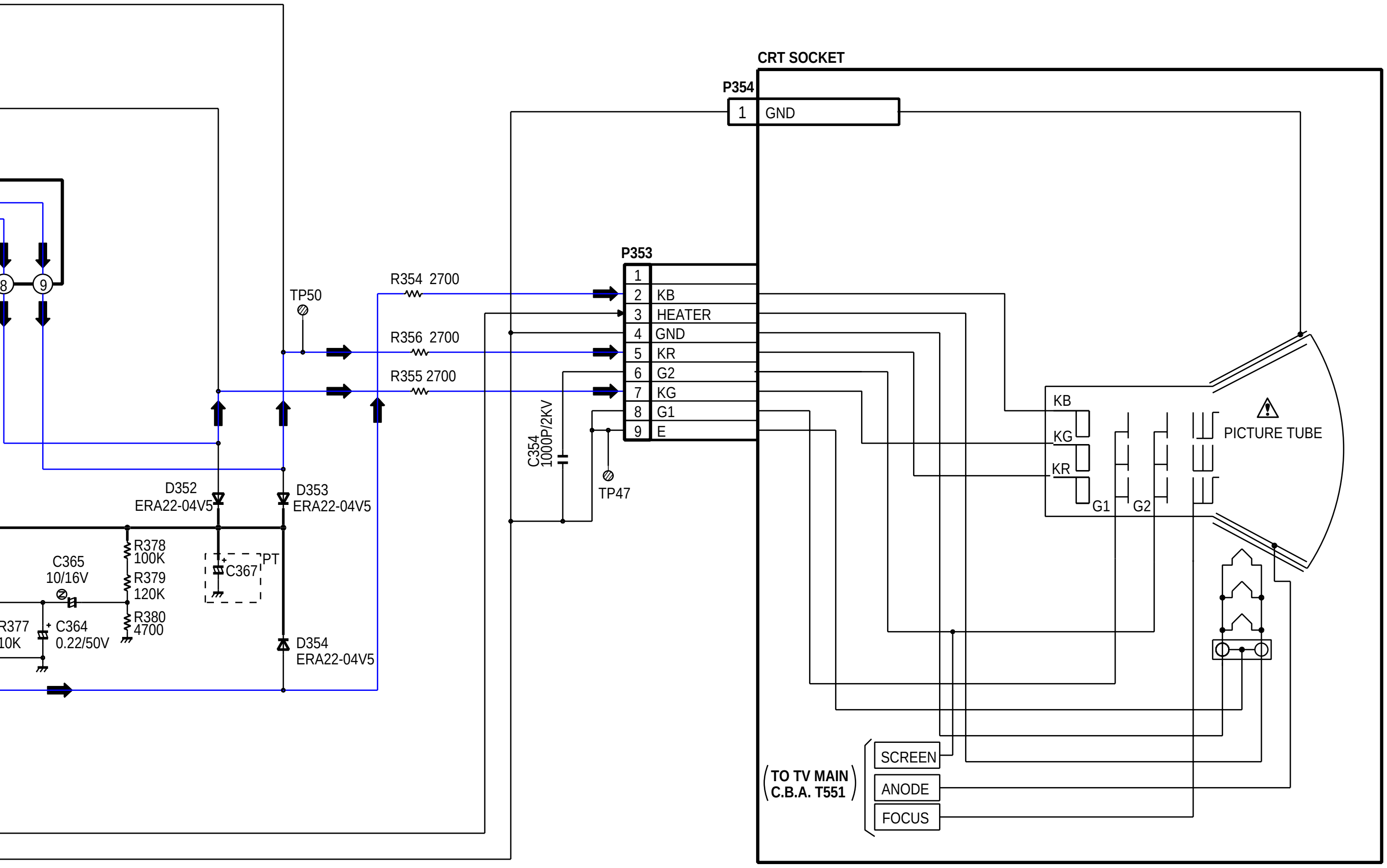
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



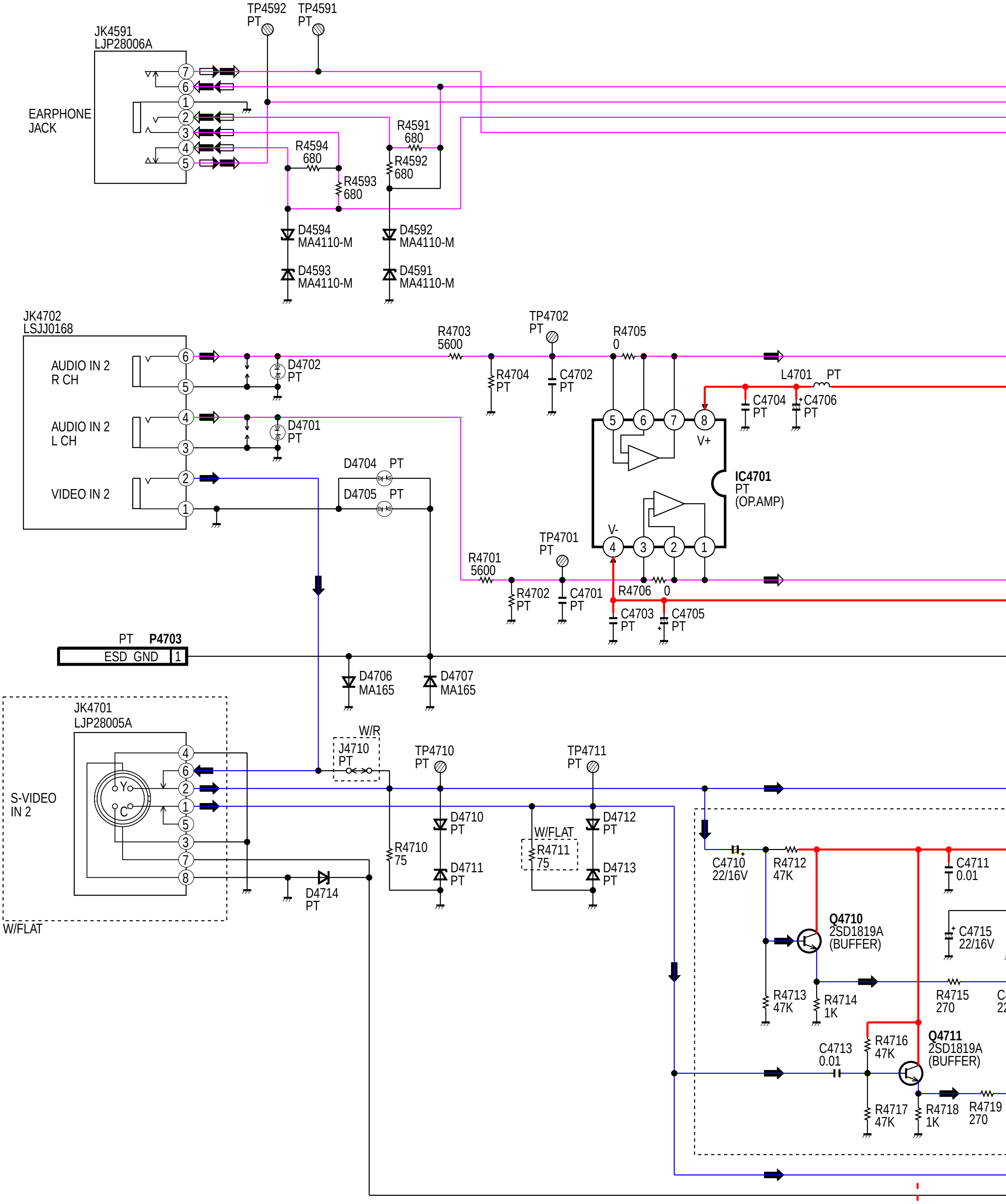
CRT SOCKET
P354
1 GND
P353
1
2 KB
3 HEATER
4 GND
5 KR
6 G2
7 KG
8 G1
9 E
8
9
TP50
R354 2700
R356 2700
R355 2700
C354 1000P/2KV
TP47
D352 ERA22-04V5
D353 ERA22-04V5
D354 ERA22-04V5
C365 10/16V
R378 100K
R379 120K
R380 4700
C367
PT
R377 10K
C364 0.22/50V
KB
KG
KR
G1
G2
⚠ PICTURE TUBE
TO TV MAIN C.B.A. T551
SCREEN
ANODE
FOCUS

LINK TO VOLTAGE CHART

LRP63013
PV-DF2002
CRT SCHEMATIC DIAGRAM

8.8. OPERATION SCHEMATIC DIAGRAM

OPERATION SCHEMATIC DIAGRAM

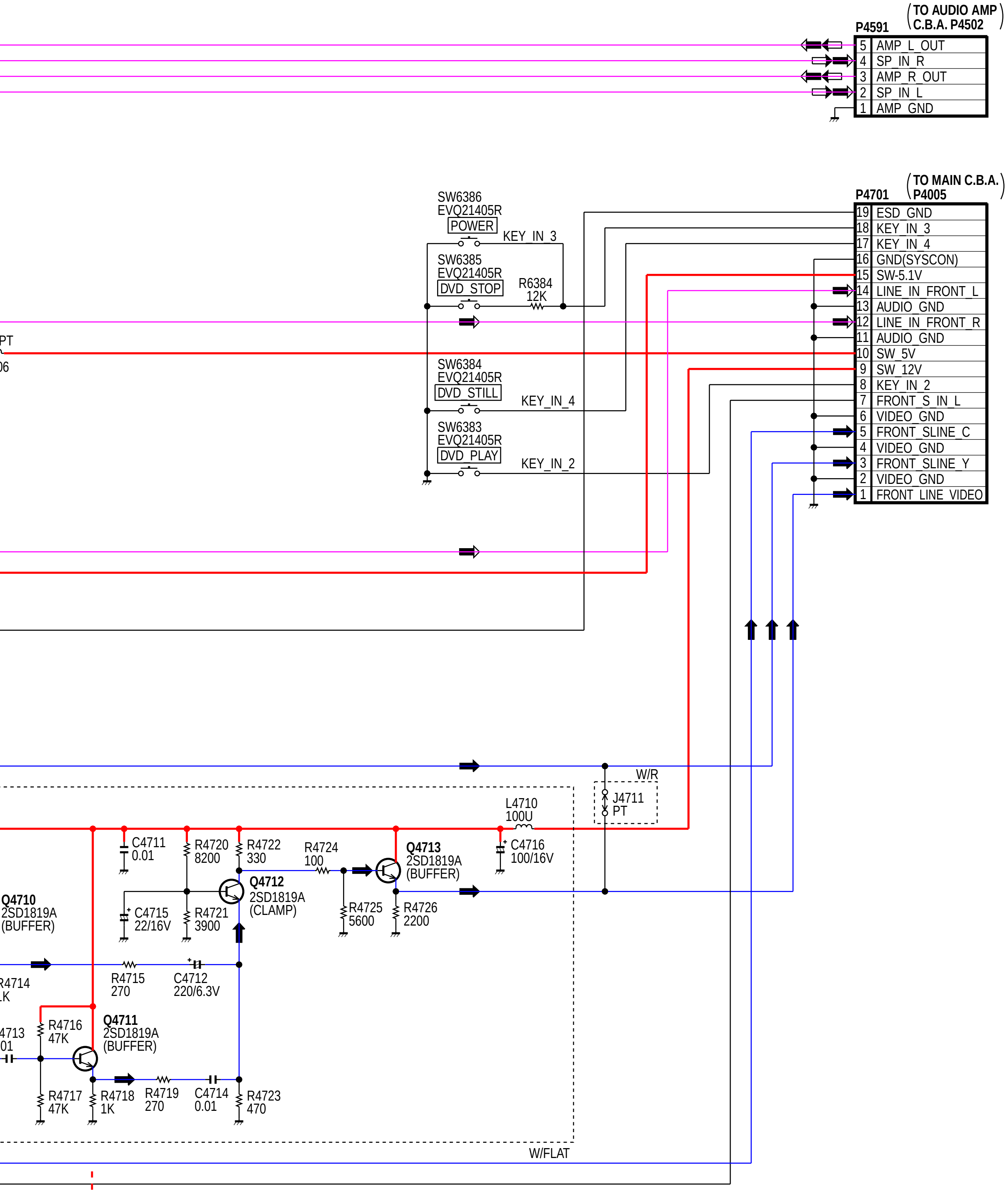

TP4592
PT
TP4591
PT
JK4591
LJP28006A
EARPHONE
JACK
7
6
1
2
3
4
5
R4591
680
R4592
680
R4594
680
R4593
680
D4594
MA4110-M
D4592
MA4110-M
D4593
MA4110-M
D4591
MA4110-M
JK4702
LSJJ0168
AUDIO IN 2
R CH
AUDIO IN 2
L CH
VIDEO IN 2
D4702
PT
D4701
PT
D4704 PT
D4705 PT
R4703
5600
TP4702
PT
R4705
0
R4704
PT
C4702
PT
L4701 PT
C4704
PT
C4706
PT
V+
IC4701
PT
(OP.AMP)
V-
TP4701
PT
R4701
5600
R4702
PT
C4701
PT
R4706 0
C4703
PT
C4705
PT
PT P4703
ESD GND
1
D4706
MA165
D4707
MA165
JK4701
LJP28005A
S-VIDEO
IN 2
Y
C
W/FLAT
W/R
J4710
PT
TP4710
PT
TP4711
PT
R4710
75
D4710
PT
D4711
PT
W/FLAT
R4711
75
D4712
PT
D4713
PT
D4714
PT
C4710
22/16V
R4712
47K
C4711
0.01
Q4710
2SD1819A
(BUFFER)
C4715
22/16V
R4713
47K
R4714
1K
R4715
270
C4713
0.01
R4716
47K
Q4711
2SD1819A
(BUFFER)
R4717
47K
R4718
1K
R4719
270

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

REC VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL

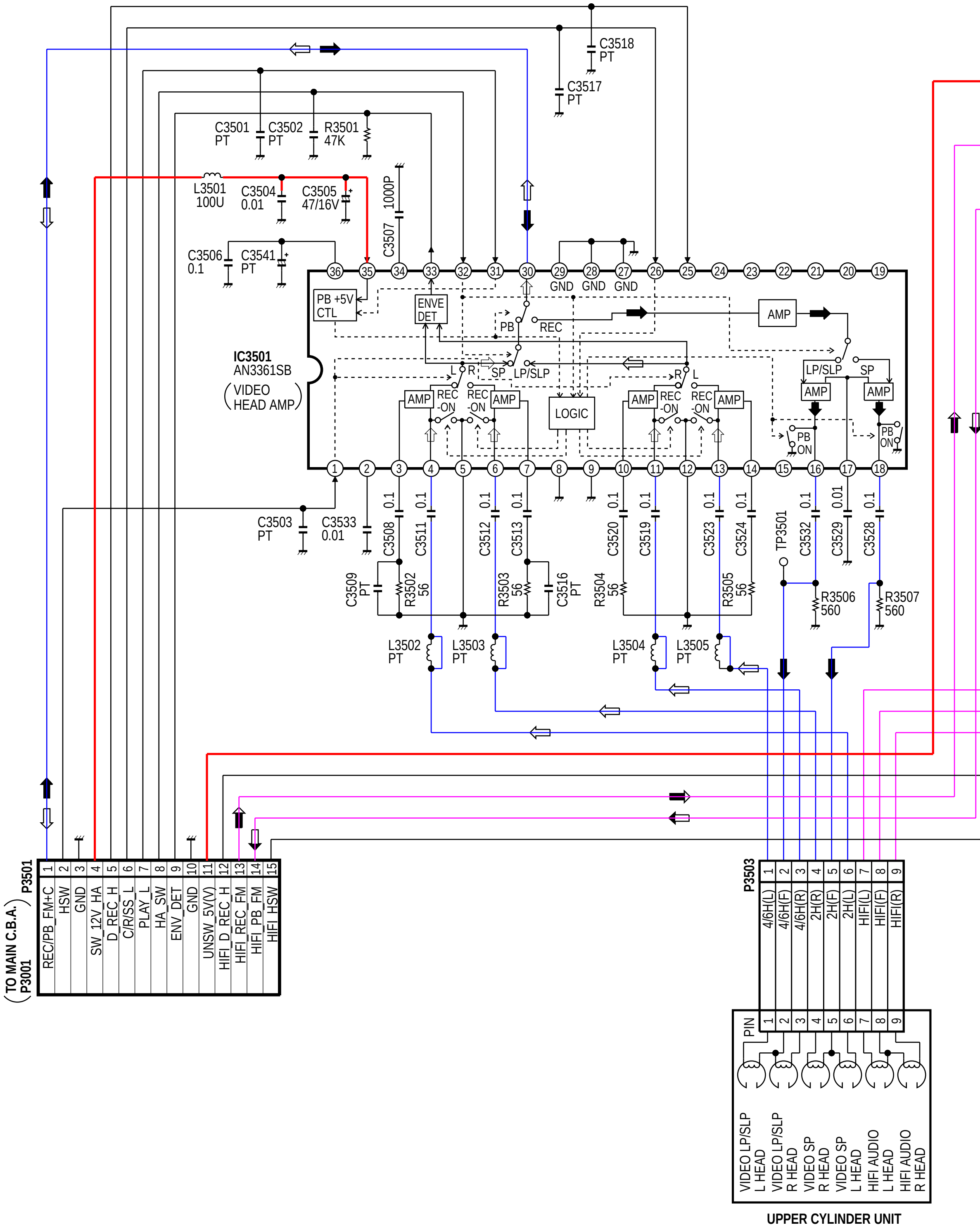


TO AUDIO AMP C.B.A. P4502
P4591
5 AMP_L_OUT
4 SP_IN_R
3 AMP_R_OUT
2 SP_IN_L
1 AMP_GND
TO MAIN C.B.A. P4005
P4701
19 ESD_GND
18 KEY_IN_3
17 KEY_IN_4
16 GND(SYSCON)
15 SW-5.1V
14 LINE_IN_FRONT_L
13 AUDIO_GND
12 LINE_IN_FRONT_R
11 AUDIO_GND
10 SW_5V
9 SW_12V
8 KEY_IN_2
7 FRONT_S_IN_L
6 VIDEO_GND
5 FRONT_SLINE_C
4 VIDEO_GND
3 FRONT_SLINE_Y
2 VIDEO_GND
1 FRONT_LINE_VIDEO
SW6386
EVQ21405R
POWER
KEY_IN_3
SW6385
EVQ21405R
DVD_STOP
R6384
12K
PT
06
SW6384
EVQ21405R
DVD_STILL
KEY_IN_4
SW6383
EVQ21405R
DVD_PLAY
KEY_IN_2
W/R
J4711
PT
L4710
100U
C4716
100/16V
C4711
0.01
R4720
8200
R4722
330
R4724
100
Q4713
2SD1819A
(BUFFER)
Q4712
2SD1819A
(CLAMP)
Q4710
2SD1819A
(BUFFER)
C4715
22/16V
R4721
3900
R4725
5600
R4726
2200
R4714
1K
R4715
270
C4712
220/6.3V
4713
01
R4716
47K
Q4711
2SD1819A
(BUFFER)
R4717
47K
R4718
1K
R4719
270
C4714
0.01
R4723
470
W/FLAT

LSJB2069
PV-DF2002
OPERATION SCHEMATIC DIAGRAM

8.9. Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM



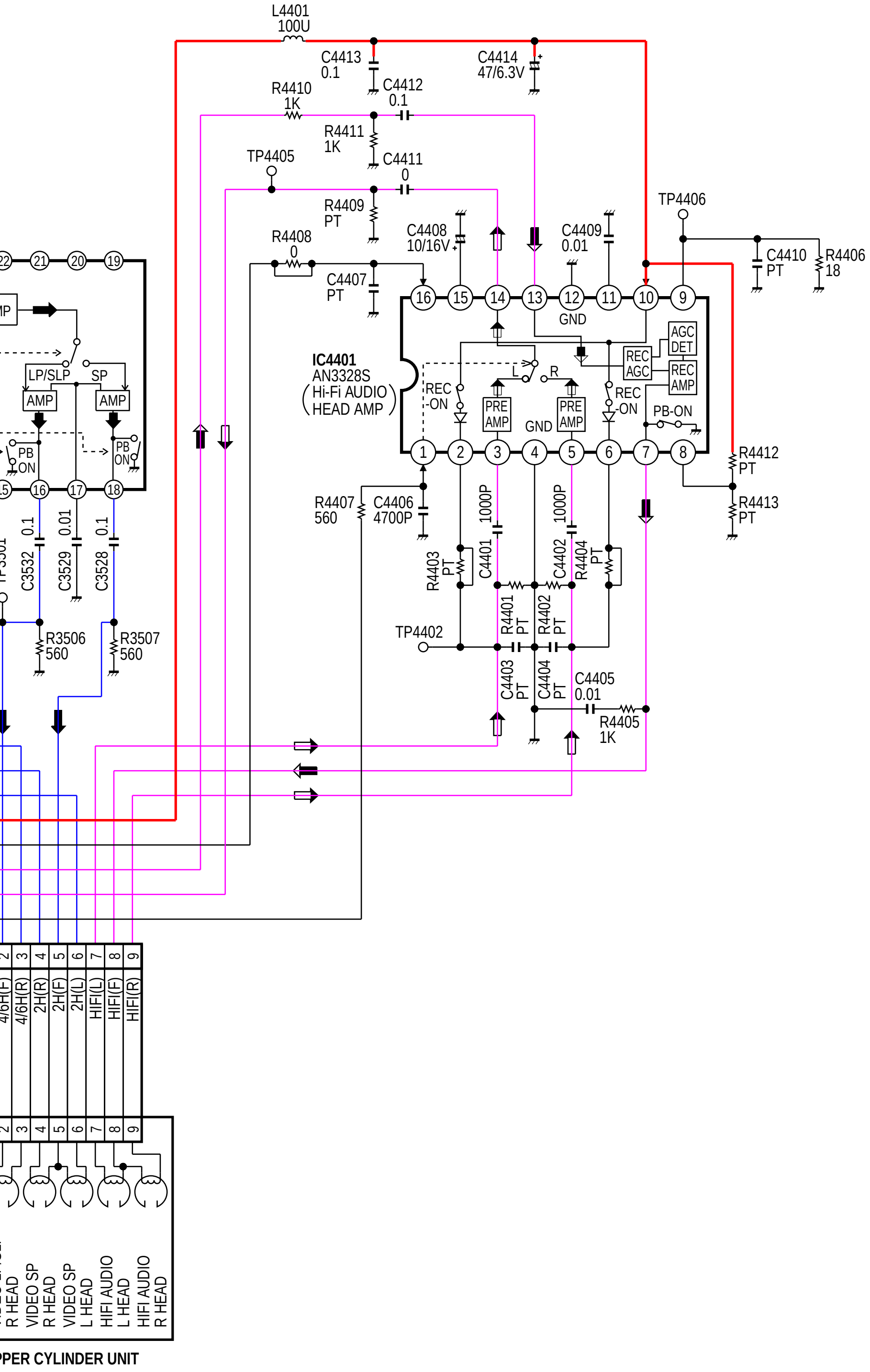
C3518
PT
C3517
PT
C3501
PT
C3502
PT
R3501
47K
L3501
100U
C3504
0.01
C3505
47/16V
1000P
C3507
C3506
0.1
C3541
PT
IC3501
AN3361SB
(VIDEO
HEAD AMP)
PB +5V
CTL
ENVE
DET
PB
REC
AMP
GND
GND
GND
LP/SLP
SP
L
R
REC
-ON
LOGIC
PB
ON
C3503
PT
C3533
0.01
C3508
C3511
C3512
C3513
C3520
C3519
C3523
C3524
TP3501
C3532
C3529
C3528
0.1
0.01
C3509
PT
R3502
56
R3503
56
C3516
PT
R3504
56
R3505
56
R3506
560
R3507
560
L3502
PT
L3503
PT
L3504
PT
L3505
PT
(TO MAIN C.B.A.)
P3001
P3501
1 REC/PB_FM+C
2 HSW
3 GND
4 SW_12V_HA
5 D_REC_H
6 C/R/SS_L
7 PLAY_L
8 HA_SW
9 ENV_DET
10 GND
11 UNSW_5V(V)
12 HIFI_D_REC_H
13 HIFI_REC_FM
14 HIFI_PB_FM
15 HIFI_HSW
P3503
1 4/6H(L)
2 4/6H(F)
3 4/6H(R)
4 2H(R)
5 2H(F)
6 2H(L)
7 HIFI(L)
8 HIFI(F)
9 HIFI(R)
PIN
VIDEO LP/SLP L HEAD
VIDEO LP/SLP R HEAD
VIDEO SP R HEAD
VIDEO SP L HEAD
HIFI AUDIO L HEAD
HIFI AUDIO R HEAD
UPPER CYLINDER UNIT

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

⬅	REC VIDEO SIGNAL	⇦	PB VIDEO SIGNAL
⬅	REC AUDIO SIGNAL	⬅	PB AUDIO SIGNAL

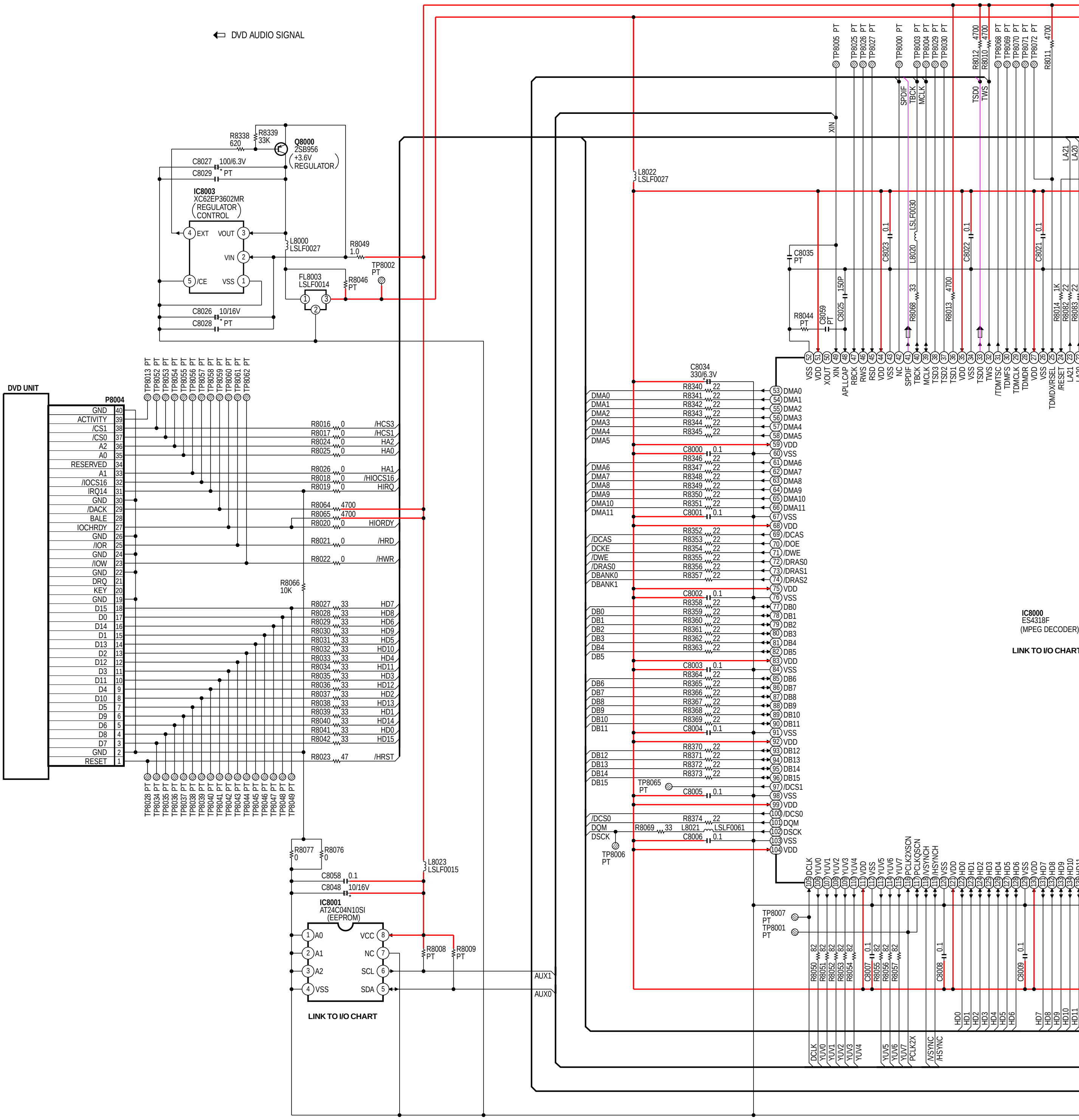

L4401
100U
C4413
0.1
C4414
47/6.3V
R4410
1K
C4412
0.1
R4411
1K
C4411
0
TP4405
R4409
PT
R4408
0
C4408
10/16V
C4409
0.01
TP4406
C4407
PT
C4410
PT
R4406
18
GND
AGC
DET
REC
AGC
REC
AMP
IC4401
AN3328S
(Hi-Fi AUDIO
HEAD AMP)
REC
-ON
L
R
PRE
AMP
GND
PRE
AMP
REC
-ON
PB-ON
R4412
PT
R4413
PT
R4407
560
C4406
4700P
1000P
1000P
R4403
PT
C4401
C4402
R4404
PT
R4401
PT
R4402
PT
TP4402
C4403
PT
C4404
PT
C4405
0.01
R4405
1K
LP/SLP
SP
AMP
AMP
PB
ON
PB
ON
C3532
0.1
C3529
0.01
C3528
0.1
R3506
560
R3507
560
4/6H(F)
4/6H(R)
2H(R)
2H(F)
2H(L)
HIFI(L)
HIFI(F)
HIFI(R)
R HEAD
VIDEO SP
R HEAD
VIDEO SP
L HEAD
HIFI AUDIO
L HEAD
HIFI AUDIO
R HEAD
PER CYLINDER UNIT

LINK TO VOLTAGE CHART

LSJB2010
PV-DF2002
Hi-Fi AUDIO/VIDEO HEAD AMP SCHEMATIC DIAGRAM

8.10. DVD DECODER SCHEMATIC DIAGRAMS

DVD DECODER I SCHEMATIC DIAGRAM

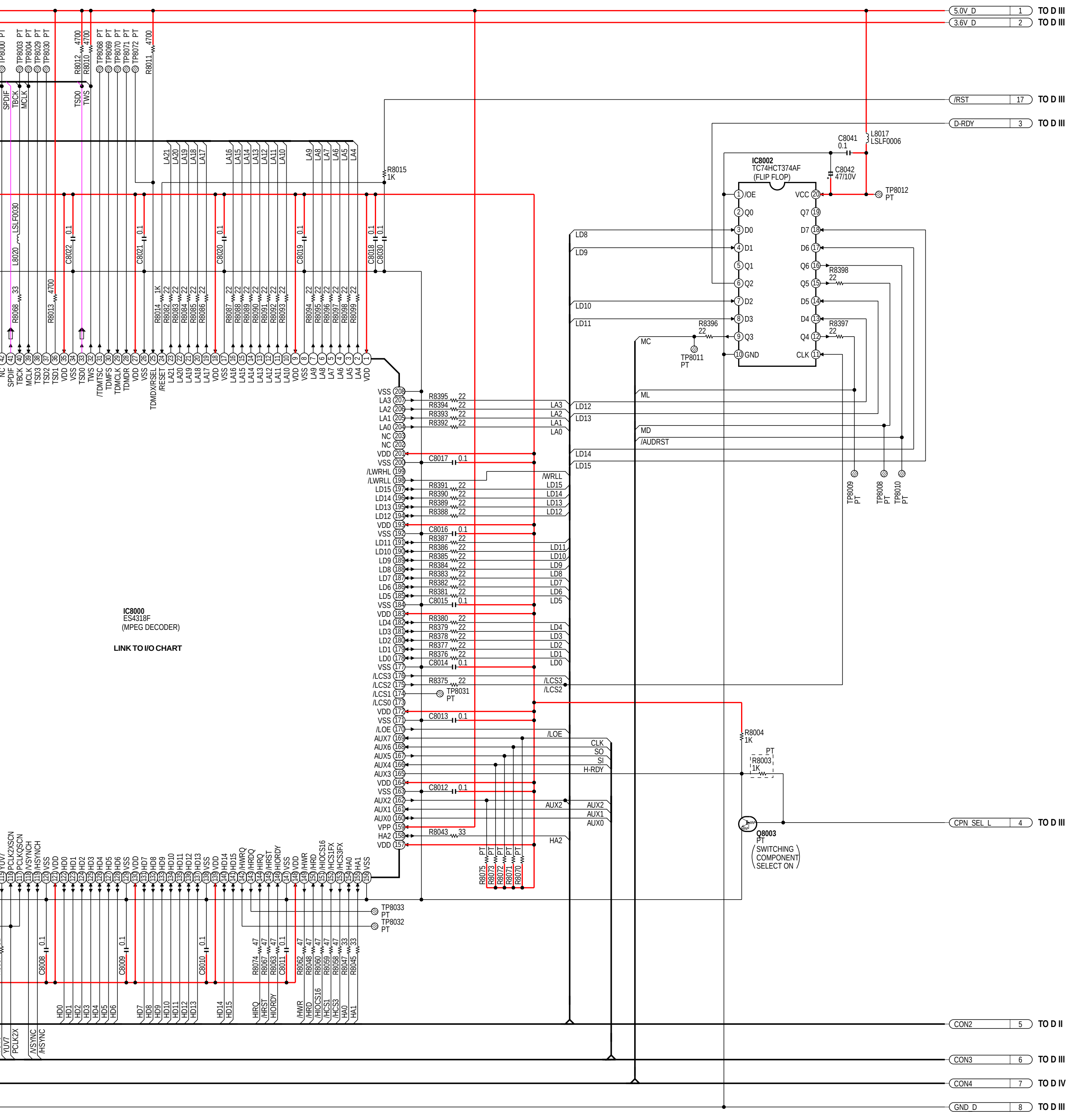

DVD AUDIO SIGNAL
R8338 620
R8339 33K
Q8000 2SB956 +3.6V REGULATOR
C8027 100/6.3V
C8029 PT
IC8003 XC62EP3602MR REGULATOR CONTROL
EXT VOUT VIN /CE VSS
L8000 LSLF0027
R8049 1.0
TP8002 PT
FL8003 LSLF0014
R8046 PT
C8026 10/16V
C8028 PT
DVD UNIT
P8004
GND ACTIVITY /CS1 /CS0 A2 A0 RESERVED A1 /IOCS16 IRQ14 GND /DACK BALE IOCHRDY GND /IOR GND /IOW GND DRQ KEY GND D15 D0 D14 D1 D13 D2 D12 D3 D11 D4 D10 D5 D9 D6 D8 D7 GND RESET
TP8013 PT TP8052 PT TP8053 PT TP8054 PT TP8055 PT TP8056 PT TP8057 PT TP8058 PT TP8059 PT TP8060 PT TP8061 PT TP8062 PT
R8016 0 /HCS3
R8017 0 /HCS1
R8024 0 HA2
R8025 0 HA0
R8026 0 HA1
R8018 0 /HIOCS16
R8019 0 HIRQ
R8064 4700
R8065 4700
R8020 0 HIORDY
R8021 0 /HRD
R8022 0 /HWR
R8066 10K
R8027 33 HD7
R8028 33 HD8
R8029 33 HD6
R8030 33 HD9
R8031 33 HD5
R8032 33 HD10
R8033 33 HD4
R8034 33 HD11
R8035 33 HD3
R8036 33 HD12
R8037 33 HD2
R8038 33 HD13
R8039 33 HD1
R8040 33 HD14
R8041 33 HD0
R8042 33 HD15
R8023 47 /HRST
TP8028 PT TP8034 PT TP8035 PT TP8036 PT TP8037 PT TP8038 PT TP8039 PT TP8040 PT TP8041 PT TP8042 PT TP8043 PT TP8044 PT TP8045 PT TP8046 PT TP8047 PT TP8048 PT TP8049 PT
R8077 0
R8076 0
L8023 LSLF0015
C8058 0.1
C8048 10/16V
IC8001 AT24C04N10SI (EEPROM)
A0 A1 A2 VSS VCC NC SCL SDA
R8008 PT
R8009 PT
AUX1
AUX0
LINK TO I/O CHART
L8022 LSLF0027
XIN
TP8005 PT TP8025 PT TP8026 PT TP8027 PT TP8000 PT TP8003 PT TP8004 PT TP8029 PT TP8030 PT
R8012 4700
R8010 4700
TP8068 PT TP8069 PT TP8070 PT TP8071 PT TP8072 PT
R8011 4700
SPDIF TBCK MCLK TSD0 TWS
LA21 LA20
C8035 PT
C8023 0.1
L8020 LSLF0030
C8022 0.1
C8021 0.1
R8044 PT
C8059 PT
C8025 150P
R8068 33
R8013 4700
R8014 1K
R8082 22
R8083 22
VSS VDD XOUT XIN APLLCAP RBCK RWS RSD VDD VSS NC SPDIF TBCK MCLK TSD3 TSD2 TSD1 VDD VSS TSD0 TWS /TDMTSC TDMFS TDMCLK TDMDR VDD VSS TDMDX/RSEL /RESET LA21
C8034 330/6.3V
DMA0 DMA1 DMA2 DMA3 DMA4 DMA5 DMA6 DMA7 DMA8 DMA9 DMA10 DMA11
R8340 22 R8341 22 R8342 22 R8343 22 R8344 22 R8345 22
C8000 0.1
R8346 22 R8347 22 R8348 22 R8349 22 R8350 22 R8351 22
C8001 0.1
/DCAS DCKE /DWE /DRAS0 DBANK0 DBANK1
R8352 22 R8353 22 R8354 22 R8355 22 R8356 22 R8357 22
C8002 0.1
R8358 22 R8359 22 R8360 22 R8361 22 R8362 22 R8363 22
DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 DB8 DB9 DB10 DB11 DB12 DB13 DB14 DB15
C8003 0.1
R8364 22 R8365 22 R8366 22 R8367 22 R8368 22 R8369 22
C8004 0.1
R8370 22 R8371 22 R8372 22 R8373 22
TP8065 PT
C8005 0.1
/DCS0 DQM DSCK
R8374 22
R8069 33
L8021 LSLF0061
C8006 0.1
TP8006 PT
53 DMA0 54 DMA1 55 DMA2 56 DMA3 57 DMA4 58 DMA5 59 VDD 60 VSS 61 DMA6 62 DMA7 63 DMA8 64 DMA9 65 DMA10 66 DMA11 67 VSS 68 VDD 69 /DCAS 70 /DOE 71 /DWE 72 /DRAS0 73 /DRAS1 74 /DRAS2 75 VDD 76 VSS 77 DB0 78 DB1 79 DB2 80 DB3 81 DB4 82 DB5 83 VDD 84 VSS 85 DB6 86 DB7 87 DB8 88 DB9 89 DB10 90 DB11 91 VSS 92 VDD 93 DB12 94 DB13 95 DB14 96 DB15 97 /DCS1 98 VSS 99 VDD 100 /DCS0 101 DQM 102 DSCK 103 VSS 104 VDD
IC8000 ES4318F (MPEG DECODER)
LINK TO I/O CHART
DCLK YUV0 YUV1 YUV2 YUV3 YUV4 VDD VSS YUV5 YUV6 YUV7 PCLK2XSCN PCLKQSCN /VSYNCH /HSYNCH VSS VDD HD0 HD1 HD2 HD3 HD4 HD5 HD6 VSS VDD HD7 HD8 HD9 HD10 HD11
TP8007 PT
TP8001 PT
R8050 82 R8051 82 R8052 82 R8053 82 R8054 82
C8007 0.1
R8055 82 R8056 82 R8057 82
C8008 0.1
C8009 0.1
HD0 HD1 HD2 HD3 HD4 HD5 HD6 HD7 HD8 HD9 HD10 HD11
DCLK YUV0 YUV1 YUV2 YUV3 YUV4 YUV5 YUV6 YUV7 PCLK2X /VSYNC /HSYNC

LINK TO VOLTAGE CHART

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

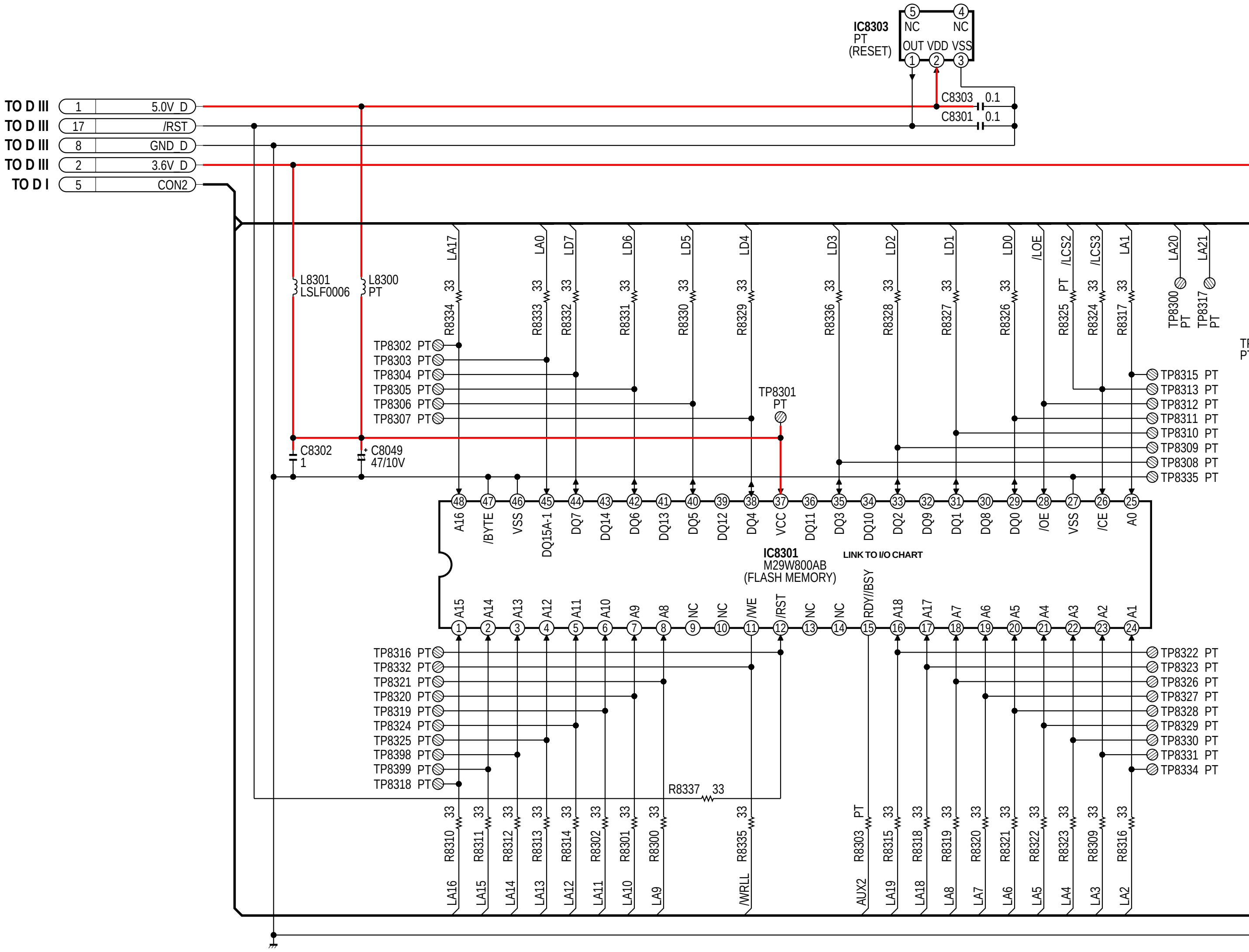
NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



IC8000
ES4318F
(MPEG DECODER)
LINK TO I/O CHART
IC8002
TC74HCT374AF
(FLIP FLOP)
Q8003
PT
SWITCHING
COMPONENT
SELECT ON
5.0V_D 1 TO D III
3.6V_D 2 TO D III
/RST 17 TO D III
D-RDY 3 TO D III
CPN_SEL_L 4 TO D III
CON2 5 TO D II
CON3 6 TO D III
CON4 7 TO D IV
GND_D 8 TO D III
C8041 0.1
L8017 LSLF0006
C8042 47/10V
TP8012 PT
R8015 1K
R8004 1K
R8003 1K PT
R8396 22
R8397 22
R8398 22
TP8011 PT
TP8009 PT
TP8008 PT
TP8010 PT
TP8031 PT
TP8032 PT
TP8033 PT
L8020 LSLF0030
R8068 33
R8013 4700
R8012 4700
R8010 4700
R8011 4700
R8043 33
R8075 R8073 R8072 R8071 R8070 PT

DVD DECODER I SCHEMATIC DIAGRAM

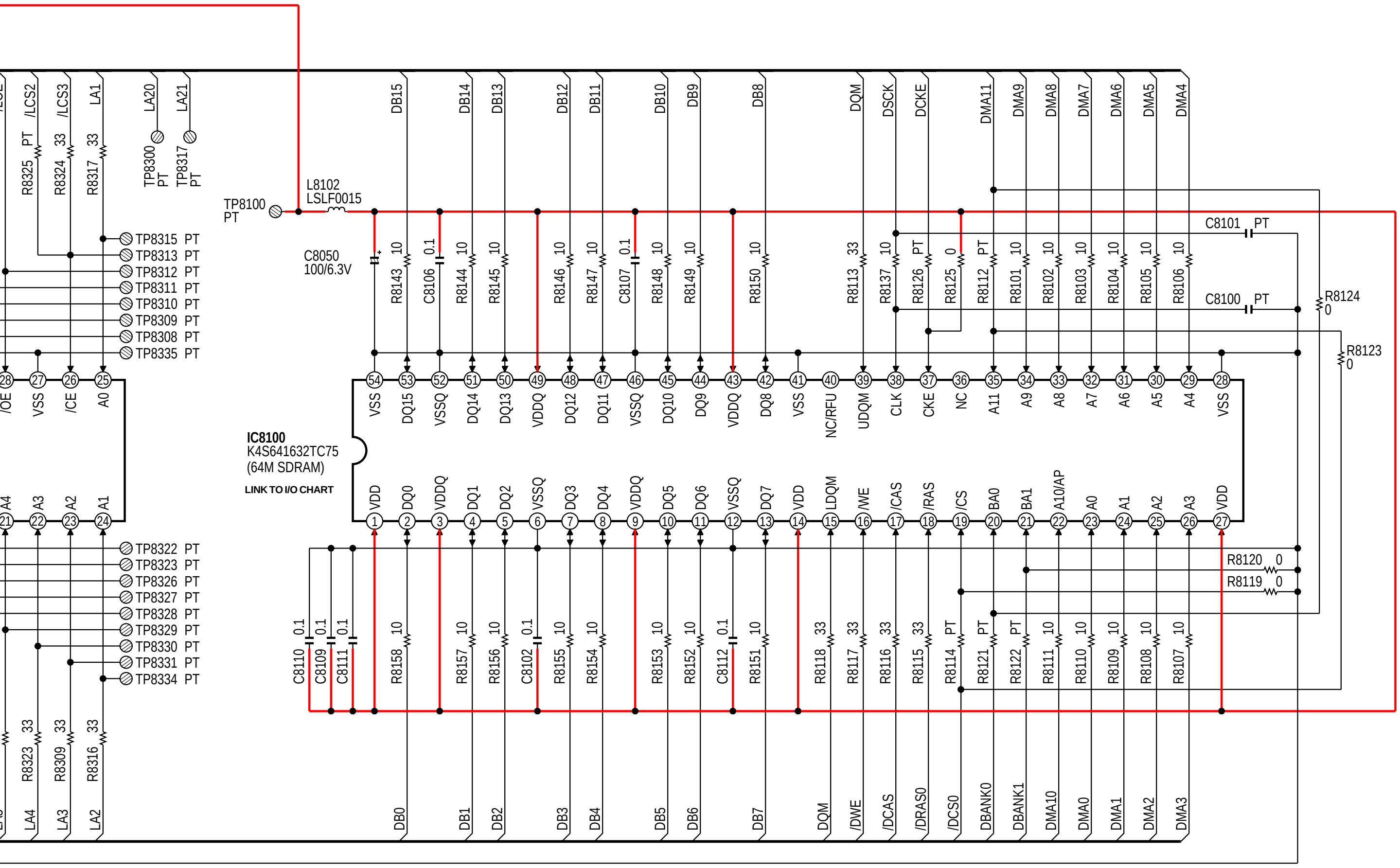
DVD DECODER II SCHEMATIC DIAGRAM


IC8303
PT
(RESET)
NC
NC
OUT VDD VSS
C8303 0.1
C8301 0.1
TO D III 1 5.0V_D
TO D III 17 /RST
TO D III 8 GND_D
TO D III 2 3.6V_D
TO D I 5 CON2
L8301
LSLF0006
L8300
PT
C8302
1
C8049
47/10V
TP8301
PT
LA17 LA0 LD7 LD6 LD5 LD4 LD3 LD2 LD1 LD0 /LOE /LCS2 /LCS3 LA1 LA20 LA21
R8334 33
R8333 33
R8332 33
R8331 33
R8330 33
R8329 33
R8336 33
R8328 33
R8327 33
R8326 33
R8325 PT
R8324 33
R8317 33
TP8300 PT
TP8317 PT
TP8302 PT
TP8303 PT
TP8304 PT
TP8305 PT
TP8306 PT
TP8307 PT
TP8315 PT
TP8313 PT
TP8312 PT
TP8311 PT
TP8310 PT
TP8309 PT
TP8308 PT
TP8335 PT
A16 /BYTE VSS DQ15A-1 DQ7 DQ14 DQ6 DQ13 DQ5 DQ12 DQ4 VCC DQ11 DQ3 DQ10 DQ2 DQ9 DQ1 DQ8 DQ0 /OE VSS /CE A0
IC8301
M29W800AB
(FLASH MEMORY)
LINK TO I/O CHART
A15 A14 A13 A12 A11 A10 A9 A8 NC NC /WE /RST NC NC RDY//BSY A18 A17 A7 A6 A5 A4 A3 A2 A1
TP8316 PT
TP8332 PT
TP8321 PT
TP8320 PT
TP8319 PT
TP8324 PT
TP8325 PT
TP8398 PT
TP8399 PT
TP8318 PT
TP8322 PT
TP8323 PT
TP8326 PT
TP8327 PT
TP8328 PT
TP8329 PT
TP8330 PT
TP8331 PT
TP8334 PT
R8337 33
R8310 33
R8311 33
R8312 33
R8313 33
R8314 33
R8302 33
R8301 33
R8300 33
R8335 33
R8303 PT
R8315 33
R8318 33
R8319 33
R8320 33
R8321 33
R8322 33
R8323 33
R8309 33
R8316 33
LA16 LA15 LA14 LA13 LA12 LA11 LA10 LA9 /WRLL AUX2 LA19 LA18 LA8 LA7 LA6 LA5 LA4 LA3 LA2

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

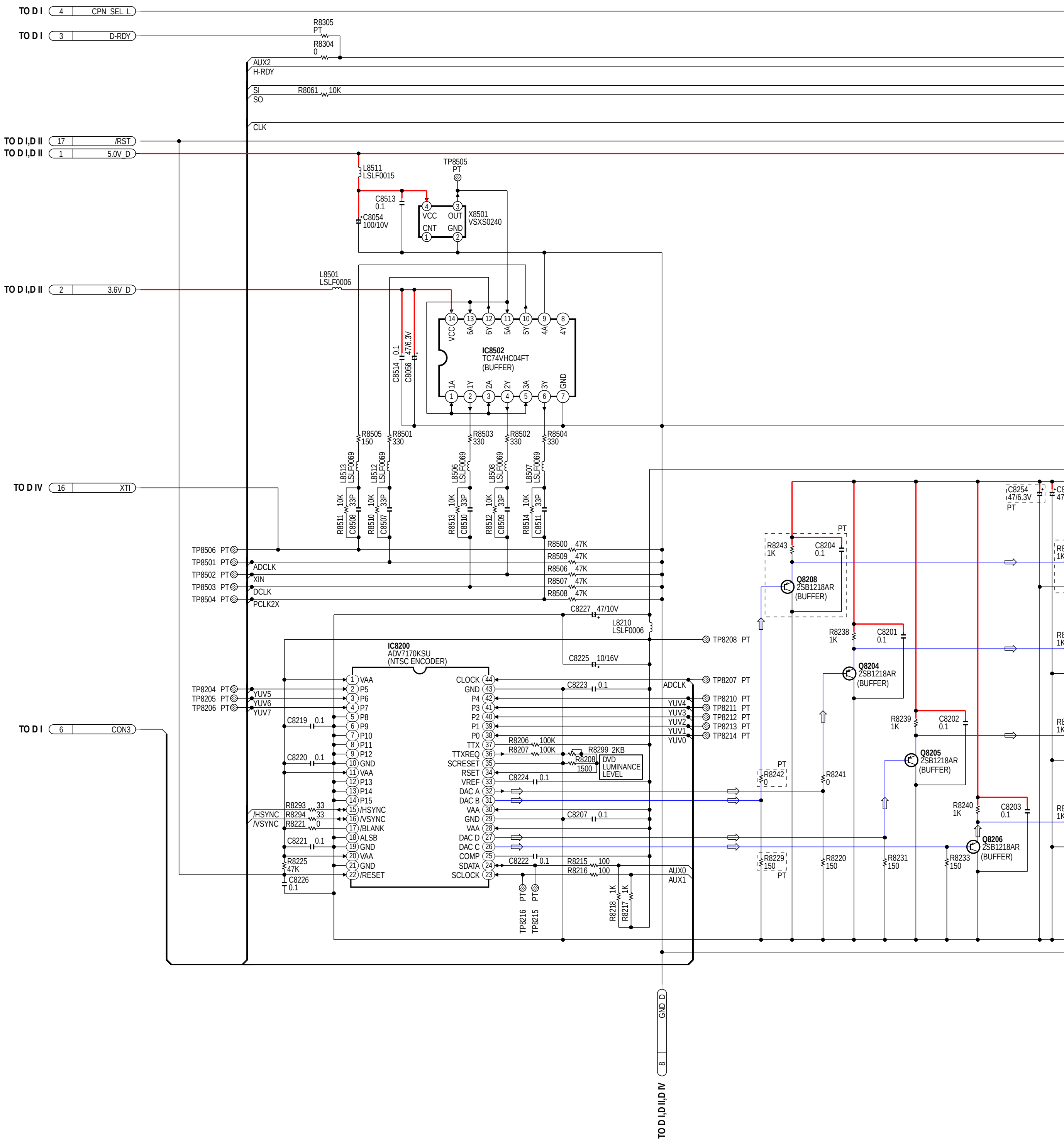


IC8100
K4S641632TC75
(64M SDRAM)
LINK TO I/O CHART
L8102
LSLF0015
TP8100
PT
C8050
100/6.3V
C8101 PT
C8100 PT
R8124
0
R8123
0
R8120 0
R8119 0
R8325 PT
R8324 33
R8317 33
R8323 33
R8309 33
R8316 33
TP8300 PT
TP8317 PT
TP8315 PT
TP8313 PT
TP8312 PT
TP8311 PT
TP8310 PT
TP8309 PT
TP8308 PT
TP8335 PT
TP8322 PT
TP8323 PT
TP8326 PT
TP8327 PT
TP8328 PT
TP8329 PT
TP8330 PT
TP8331 PT
TP8334 PT
/LCS2
/LCS3
LA1
LA20
LA21
LA4
LA3
LA2
/OE
VSS
/CE
A0
A4
A3
A2
A1
DB15
DB14
DB13
DB12
DB11
DB10
DB9
DB8
DQM
DSCK
DCKE
DMA11
DMA9
DMA8
DMA7
DMA6
DMA5
DMA4
R8143 10
C8106 0.1
R8144 10
R8145 10
R8146 10
R8147 10
C8107 0.1
R8148 10
R8149 10
R8150 10
R8113 33
R8137 10
R8126 PT
R8125 0
R8112 PT
R8101 10
R8102 10
R8103 10
R8104 10
R8105 10
R8106 10
VSS
DQ15
VSSQ
DQ14
DQ13
VDDQ
DQ12
DQ11
VSSQ
DQ10
DQ9
VDDQ
DQ8
VSS
NC/RFU
UDQM
CLK
CKE
NC
A11
A9
A8
A7
A6
A5
A4
VSS
VDD
DQ0
VDDQ
DQ1
DQ2
VSSQ
DQ3
DQ4
VDDQ
DQ5
DQ6
VSSQ
DQ7
VDD
LDQM
/WE
/CAS
/RAS
/CS
BA0
BA1
A10/AP
A0
A1
A2
A3
VDD
C8110 0.1
C8109 0.1
C8111 0.1
R8158 10
R8157 10
R8156 10
C8102 0.1
R8155 10
R8154 10
R8153 10
R8152 10
C8112 0.1
R8151 10
R8118 33
R8117 33
R8116 33
R8115 33
R8114 PT
R8121 PT
R8122 PT
R8111 10
R8110 10
R8109 10
R8108 10
R8107 10
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DQM
/DWE
/DCAS
/DRAS0
/DCS0
DBANK0
DBANK1
DMA10
DMA0
DMA1
DMA2
DMA3

LINK TO VOLTAGE CHART

LSJB2007
PV-DF2002
DVD DECODER II SCHEMATIC DIAGRAM

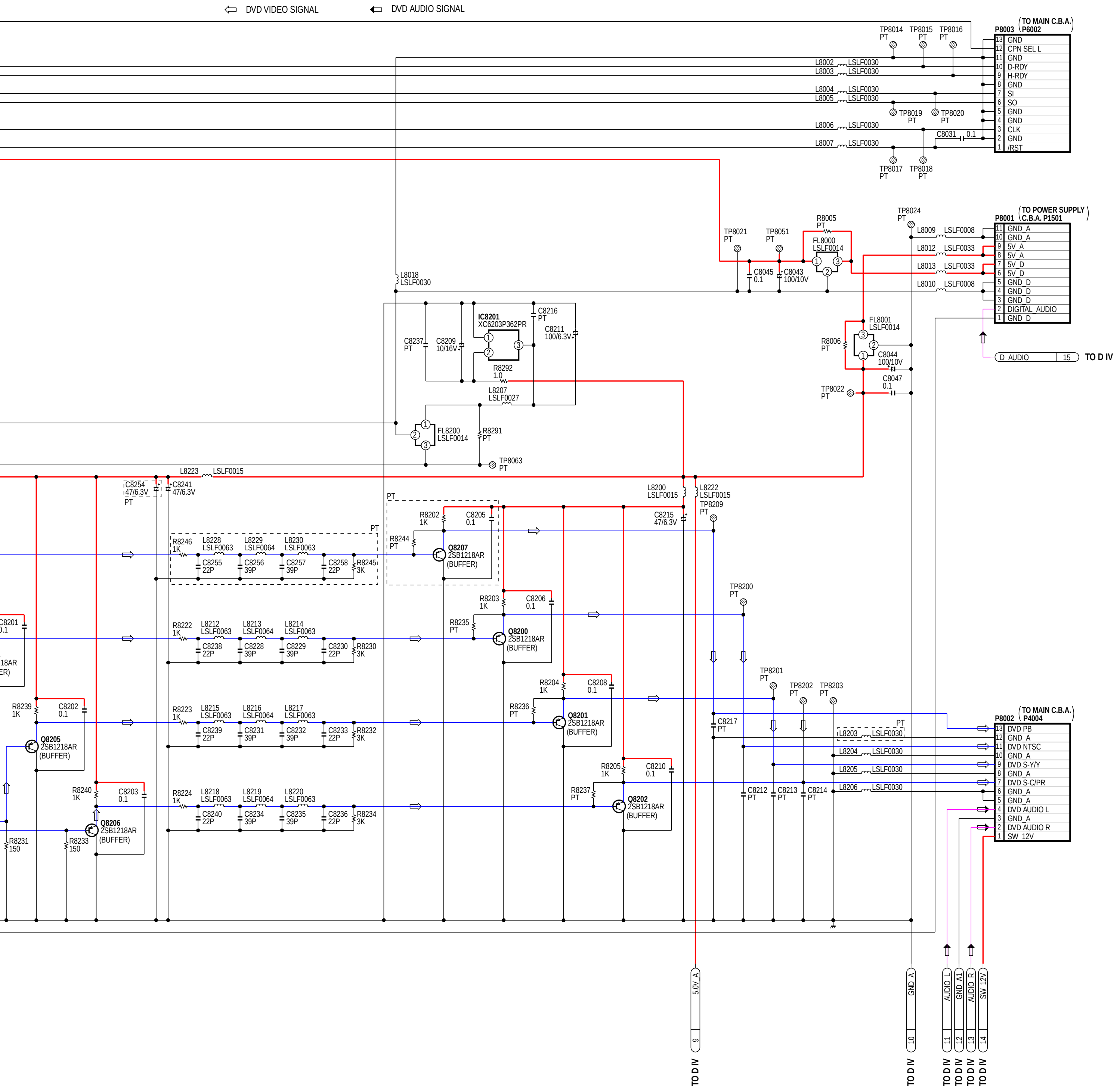
DVD DECODER III SCHEMATIC DIAGRAM


TO D I 4 CPN_SEL_L
TO D I 3 D-RDY
R8305 PT
R8304 0
AUX2
H-RDY
SI
SO
R8061 10K
CLK
TO D I,D II 17 /RST
TO D I,D II 1 5.0V_D
L8511 LSLF0015
TP8505 PT
C8513 0.1
C8054 100/10V
X8501 VSXS0240
VCC OUT CNT GND
L8501 LSLF0006
TO D I,D II 2 3.6V_D
C8514 0.1
C8056 47/6.3V
IC8502 TC74VHC04FT (BUFFER)
VCC 6A 6Y 5A 5Y 4A 4Y
1A 1Y 2A 2Y 3A 3Y GND
R8505 150
R8501 330
R8503 330
R8502 330
R8504 330
L8513 LSLF0069
L8512 LSLF0069
L8506 LSLF0069
L8508 LSLF0069
L8507 LSLF0069
R8511 10K C8508 33P
R8510 10K C8507 33P
R8513 10K C8510 33P
R8512 10K C8509 33P
R8514 10K C8511 33P
TO D IV 16 XTI
TP8506 PT
TP8501 PT ADCLK
TP8502 PT XIN
TP8503 PT DCLK
TP8504 PT PCLK2X
R8500 47K
R8509 47K
R8506 47K
R8507 47K
R8508 47K
C8227 47/10V
L8210 LSLF0006
C8225 10/16V
IC8200 ADV7170KSU (NTSC ENCODER)
1 VAA 2 P5 3 P6 4 P7 5 P8 6 P9 7 P10 8 P11 9 P12 10 GND 11 VAA 12 P13 13 P14 14 P15 15 /HSYNC 16 /VSYNC 17 /BLANK 18 ALSB 19 GND 20 VAA 21 GND 22 /RESET
CLOCK 44 GND 43 P4 42 P3 41 P2 40 P1 39 P0 38 TTX 37 TTXREQ 36 SCRESET 35 RSET 34 VREF 33 DAC A 32 DAC B 31 VAA 30 GND 29 VAA 28 DAC D 27 DAC C 26 COMP 25 SDATA 24 SCLOCK 23
TP8204 PT YUV5
TP8205 PT YUV6
TP8206 PT YUV7
TO D I 6 CON3
C8219 0.1
C8220 0.1
C8221 0.1
R8293 33
R8294 33
R8221 0
/HSYNC
/VSYNC
R8225 47K
C8226 0.1
C8223 0.1
R8206 100K
R8207 100K
R8299 2KB
R8208 1500
DVD LUMINANCE LEVEL
C8224 0.1
C8207 0.1
C8222 0.1
R8215 100
R8216 100
R8218 1K
R8217 1K
TP8216 PT
TP8215 PT
ADCLK
YUV4 YUV3 YUV2 YUV1 YUV0
AUX0 AUX1
TP8208 PT
TP8207 PT
TP8210 PT
TP8211 PT
TP8212 PT
TP8213 PT
TP8214 PT
GND_D 8
TO D II,D II,D IV
R8243 1K
C8204 0.1
PT
Q8208 2SB1218AR (BUFFER)
R8238 1K
C8201 0.1
Q8204 2SB1218AR (BUFFER)
R8239 1K
C8202 0.1
Q8205 2SB1218AR (BUFFER)
R8240 1K
C8203 0.1
Q8206 2SB1218AR (BUFFER)
R8242 0 PT
R8241 0
R8229 150 PT
R8220 150
R8231 150
R8233 150
C8254 47/6.3V PT

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.



⇦ DVD VIDEO SIGNAL
⇦ DVD AUDIO SIGNAL
P8003 (TO MAIN C.B.A. P6002)
13 GND
12 CPN SEL L
11 GND
10 D-RDY
9 H-RDY
8 GND
7 SI
6 SO
5 GND
4 GND
3 CLK
2 GND
1 /RST
TP8014 PT
TP8015 PT
TP8016 PT
TP8017 PT
TP8018 PT
TP8019 PT
TP8020 PT
L8002 LSLF0030
L8003 LSLF0030
L8004 LSLF0030
L8005 LSLF0030
L8006 LSLF0030
L8007 LSLF0030
C8031 0.1
P8001 (TO POWER SUPPLY C.B.A. P1501)
11 GND_A
10 GND_A
9 5V_A
8 5V_A
7 5V_D
6 5V_D
5 GND_D
4 GND_D
3 GND_D
2 DIGITAL_AUDIO
1 GND_D
D_AUDIO 15 TO D IV
TP8024 PT
L8009 LSLF0008
L8012 LSLF0033
L8013 LSLF0033
L8010 LSLF0008
TP8021 PT
TP8051 PT
R8005 PT
FL8000 LSLF0014
C8045 0.1
C8043 100/10V
FL8001 LSLF0014
R8006 PT
C8044 100/10V
C8047 0.1
TP8022 PT
L8018 LSLF0030
IC8201 XC6203P362PR
C8216 PT
C8211 100/6.3V
C8237 PT
C8209 10/16V
R8292 1.0
L8207 LSLF0027
FL8200 LSLF0014
R8291 PT
TP8063 PT
L8223 LSLF0015
C8254 47/6.3V PT
C8241 47/6.3V
L8200 LSLF0015
L8222 LSLF0015
TP8209 PT
C8215 47/6.3V
R8202 1K
C8205 0.1
R8244 PT
Q8207 2SB1218AR (BUFFER)
R8246 1K
L8228 LSLF0063
L8229 LSLF0064
L8230 LSLF0063
C8255 22P
C8256 39P
C8257 39P
C8258 22P
R8245 3K
R8203 1K
C8206 0.1
R8235 PT
Q8200 2SB1218AR (BUFFER)
TP8200 PT
C8201 0.1
R8222 1K
L8212 LSLF0063
L8213 LSLF0064
L8214 LSLF0063
C8238 22P
C8228 39P
C8229 39P
C8230 22P
R8230 3K
R8204 1K
C8208 0.1
R8236 PT
Q8201 2SB1218AR (BUFFER)
TP8201 PT
TP8202 PT
TP8203 PT
R8239 1K
C8202 0.1
Q8205 2SB1218AR (BUFFER)
R8223 1K
L8215 LSLF0063
L8216 LSLF0064
L8217 LSLF0063
C8239 22P
C8231 39P
C8232 39P
C8233 22P
R8232 3K
C8217 PT
P8002 (TO MAIN C.B.A. P4004)
13 DVD PB
12 GND_A
11 DVD NTSC
10 GND_A
9 DVD S-Y/Y
8 GND_A
7 DVD S-C/PR
6 GND_A
5 GND_A
4 DVD AUDIO L
3 GND_A
2 DVD AUDIO R
1 SW_12V
L8203 LSLF0030 PT
L8204 LSLF0030
L8205 LSLF0030
L8206 LSLF0030
R8205 1K
C8210 0.1
R8240 1K
C8203 0.1
Q8206 2SB1218AR (BUFFER)
R8224 1K
L8218 LSLF0063
L8219 LSLF0064
L8220 LSLF0063
C8240 22P
C8234 39P
C8235 39P
C8236 22P
R8234 3K
R8237 PT
Q8202 2SB1218AR (BUFFER)
C8212 PT
C8213 PT
C8214 PT
R8231 150
R8233 150
5.0V_A 9 TO D IV
GND_A 10 TO D IV
AUDIO_L 11 TO D IV
GND_A1 12 TO D IV
AUDIO_R 13 TO D IV
SW_12V 14 TO D IV

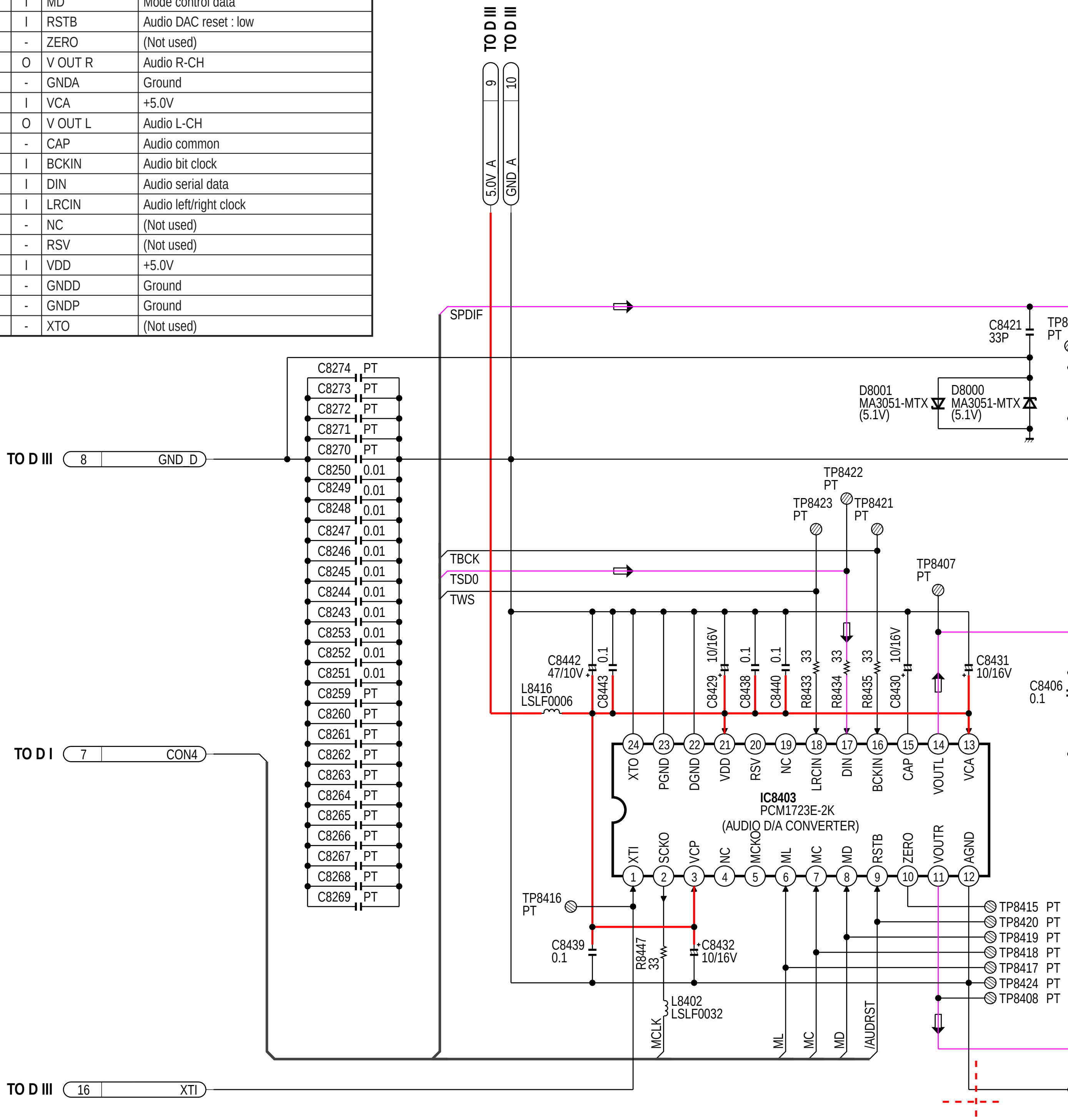
LINK TO VOLTAGE CHART

LSJB2007
PV-DF2002
DVD DECODER III SCHEMATIC DIAGRAM

DVD DECODER IV SCHEMATIC DIAGRAM

I/O CHART OF IC8403

Pin No.	I/O	Signal Name	Description
1	I	XTI	27MHz clock
2	O	SCKO	System clock
3	I	VCP	+5.0V
4	-	NC	(Not used)
5	-	MCKO	(Not used)
6	I	ML	Mode control latch
7	I	MC	Mode control clock
8	I	MD	Mode control data
9	I	RSTB	Audio DAC reset : low
10	-	ZERO	(Not used)
11	O	V OUT R	Audio R-CH
12	-	GNDA	Ground
13	I	VCA	+5.0V
14	O	V OUT L	Audio L-CH
15	-	CAP	Audio common
16	I	BCKIN	Audio bit clock
17	I	DIN	Audio serial data
18	I	LRCIN	Audio left/right clock
19	-	NC	(Not used)
20	-	RSV	(Not used)
21	I	VDD	+5.0V
22	-	GNDD	Ground
23	-	GNDP	Ground
24	-	XTO	(Not used)



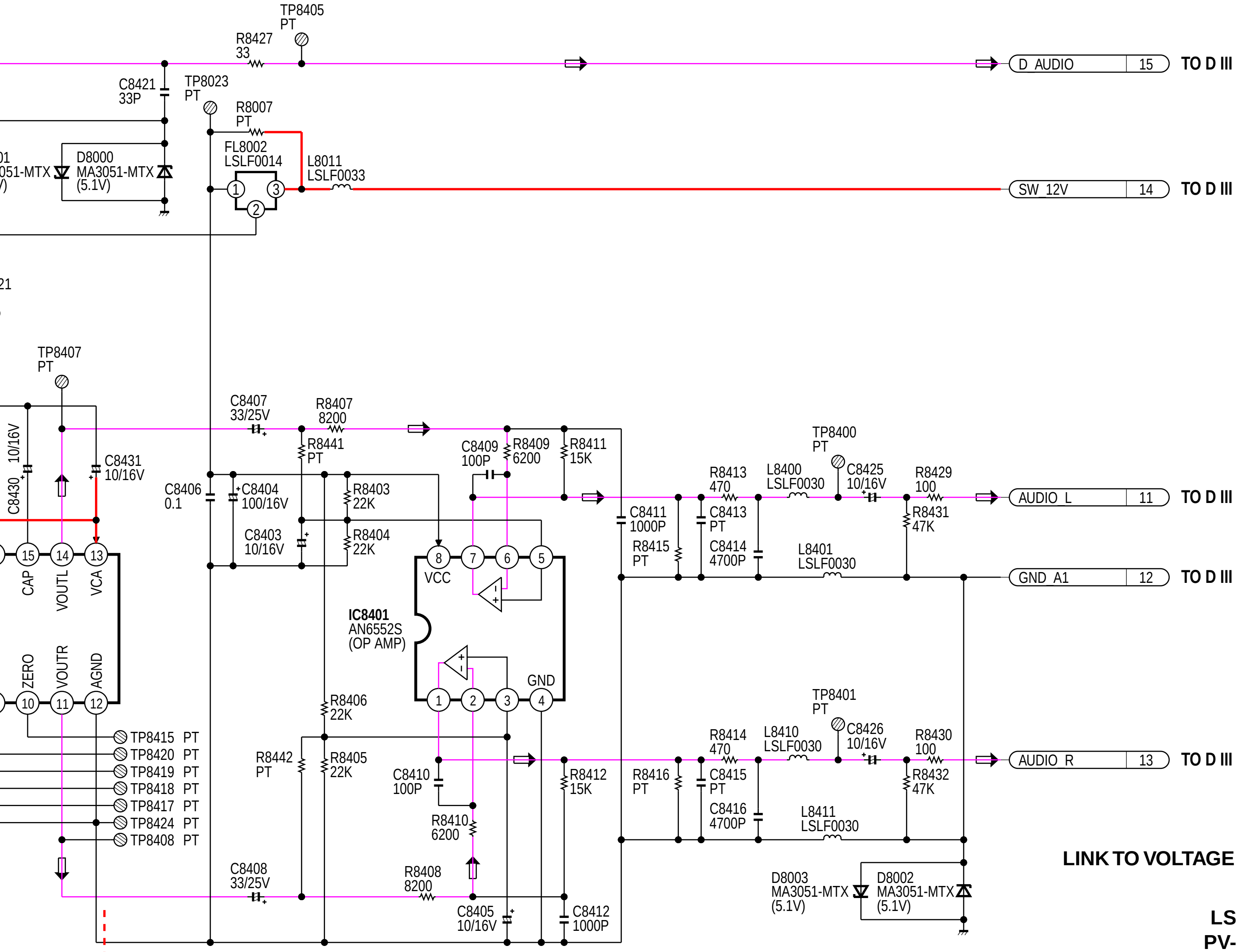
TO D III
9
5.0V_A
TO D III
10
GND_A
SPDIF
C8421
33P
D8001
MA3051-MTX
(5.1V)
D8000
MA3051-MTX
(5.1V)
TO D III
8
GND_D
C8274 PT
C8273 PT
C8272 PT
C8271 PT
C8270 PT
C8250 0.01
C8249 0.01
C8248 0.01
C8247 0.01
C8246 0.01
C8245 0.01
C8244 0.01
C8243 0.01
C8253 0.01
C8252 0.01
C8251 0.01
C8259 PT
C8260 PT
C8261 PT
C8262 PT
C8263 PT
C8264 PT
C8265 PT
C8266 PT
C8267 PT
C8268 PT
C8269 PT
TP8422 PT
TP8423 PT
TP8421 PT
TBCK
TSD0
TWS
TP8407 PT
C8442 47/10V
C8443 0.1
L8416 LSLF0006
C8429 10/16V
C8438 0.1
C8440 0.1
R8433 33
R8434 33
R8435 33
C8430 10/16V
C8431 10/16V
C8406 0.1
TO D I
7
CON4
IC8403
PCM1723E-2K
(AUDIO D/A CONVERTER)
XTO PGND DGND VDD RSV NC LRCIN DIN BCKIN CAP VOUTL VCA
XTI SCKO VCP NC MCKO ML MC MD RSTB ZERO VOUTR AGND
TP8416 PT
C8439 0.1
R8447 33
C8432 10/16V
L8402 LSLF0032
MCLK
ML
MC
MD
/AUDRST
TP8415 PT
TP8420 PT
TP8419 PT
TP8418 PT
TP8417 PT
TP8424 PT
TP8408 PT
TO D III
16
XTI

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

⇦ DVD AUDIO SIGNAL



TP8405
PT
R8427
33
D_AUDIO 15
TO D III
C8421
33P
TP8023
PT
R8007
PT
FL8002
LSLF0014
L8011
LSLF0033
SW_12V 14
TO D III
D8000
MA3051-MTX
(5.1V)
051-MTX
21
TP8407
PT
C8430 10/16V
C8431
10/16V
CAP
VOUTL
VCA
ZERO
VOUTR
AGND
15
14
13
10
11
12
C8407
33/25V
R8407
8200
R8441
PT
C8406
0.1
C8404
100/16V
R8403
22K
C8403
10/16V
R8404
22K
C8409
100P
R8409
6200
R8411
15K
VCC
IC8401
AN6552S
(OP AMP)
GND
R8413
470
L8400
LSLF0030
TP8400
PT
C8425
10/16V
R8429
100
AUDIO_L 11
TO D III
C8411
1000P
R8415
PT
C8413
PT
C8414
4700P
L8401
LSLF0030
R8431
47K
GND_A1 12
TO D III
R8406
22K
R8442
PT
R8405
22K
C8410
100P
R8410
6200
R8412
15K
R8416
PT
R8414
470
L8410
LSLF0030
TP8401
PT
C8426
10/16V
R8430
100
AUDIO_R 13
TO D III
R8432
47K
C8415
PT
C8416
4700P
L8411
LSLF0030
TP8415 PT
TP8420 PT
TP8419 PT
TP8418 PT
TP8417 PT
TP8424 PT
TP8408 PT
C8408
33/25V
R8408
8200
C8405
10/16V
C8412
1000P
D8003
MA3051-MTX
(5.1V)
D8002
MA3051-MTX
(5.1V)

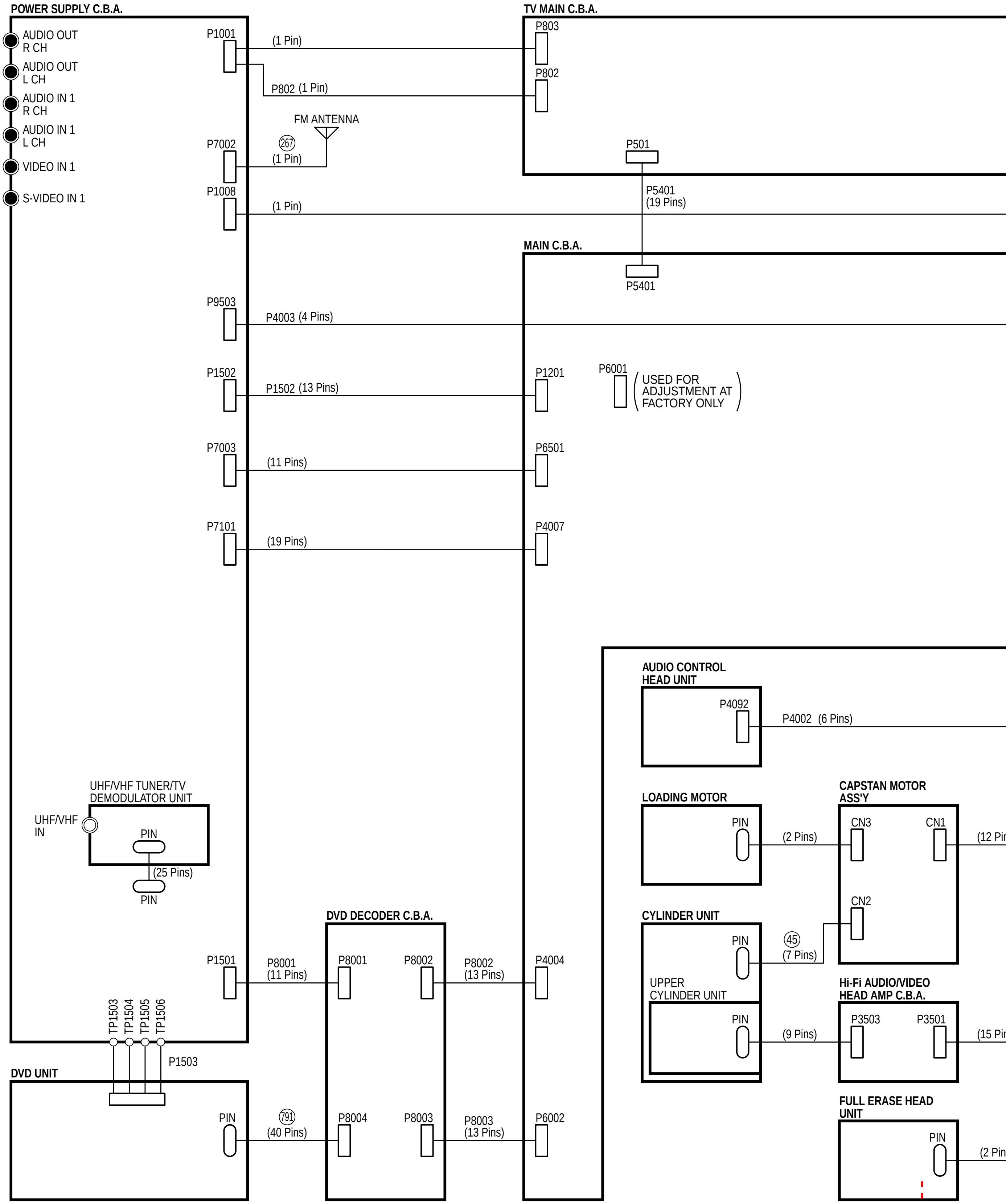
LINK TO VOLTAGE CHART

LSJB2007
PV-DF2002
DVD DECODER IV SCHEMATIC DIAGRAM

8.11. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

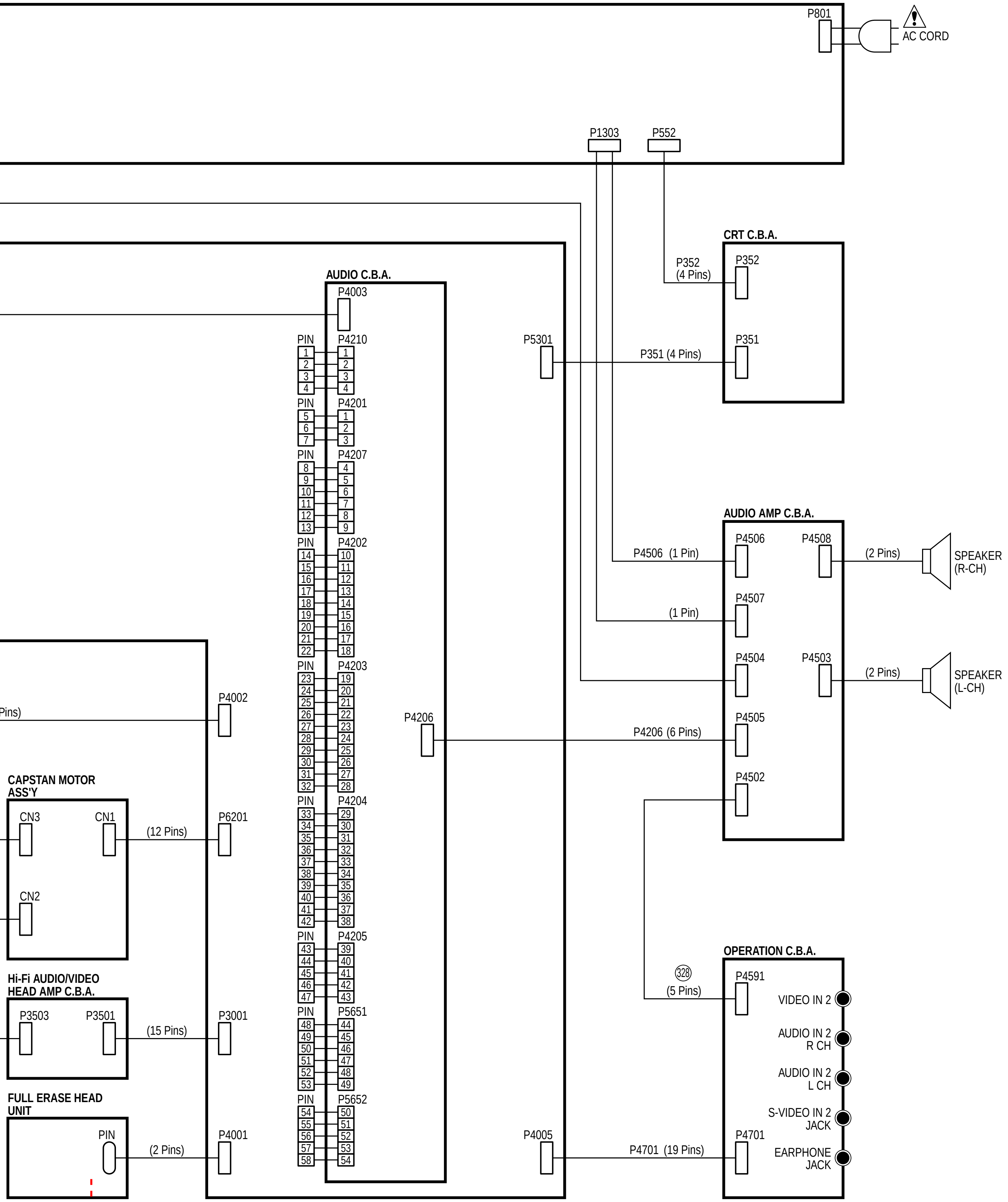
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.


POWER SUPPLY C.B.A.
AUDIO OUT R CH
AUDIO OUT L CH
AUDIO IN 1 R CH
AUDIO IN 1 L CH
VIDEO IN 1
S-VIDEO IN 1
P1001
(1 Pin)
P802 (1 Pin)
FM ANTENNA
267
P7002
(1 Pin)
P1008
(1 Pin)
TV MAIN C.B.A.
P803
P802
P501
P5401
(19 Pins)
MAIN C.B.A.
P5401
P9503
P4003 (4 Pins)
P1502
P1502 (13 Pins)
P1201
P6001
USED FOR ADJUSTMENT AT FACTORY ONLY
P7003
(11 Pins)
P6501
P7101
(19 Pins)
P4007
AUDIO CONTROL HEAD UNIT
P4092
P4002 (6 Pins)
LOADING MOTOR
PIN
(2 Pins)
CAPSTAN MOTOR ASS'Y
CN3
CN1
(12 Pi
CN2
CYLINDER UNIT
PIN
45
(7 Pins)
UPPER CYLINDER UNIT
PIN
(9 Pins)
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
P3503
P3501
(15 Pi
FULL ERASE HEAD UNIT
PIN
(2 Pin
UHF/VHF TUNER/TV DEMODULATOR UNIT
UHF/VHF IN
PIN
(25 Pins)
PIN
P1501
P8001
(11 Pins)
DVD DECODER C.B.A.
P8001
P8002
P8002
(13 Pins)
P4004
TP1503
TP1504
TP1505
TP1506
P1503
DVD UNIT
PIN
791
(40 Pins)
P8004
P8003
P8003
(13 Pins)
P6002

NOTICE:
IFIED BY THE SIGN ⚠ HAVE
ISTICS IMPORTANT FOR SAFETY.
Y OF THESE COMPONENTS,
FIED PARTS.

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



P801
AC CORD
P1303
P552
CRT C.B.A.
P352 (4 Pins)
P352
P351
P351 (4 Pins)
P5301
AUDIO C.B.A.
P4003
PIN
P4210
P4201
P4207
P4202
P4203
P4204
P4205
P5651
P5652
P4002
Pins)
P4206
P4206 (6 Pins)
AUDIO AMP C.B.A.
P4506
P4508
P4506 (1 Pin)
(2 Pins)
SPEAKER (R-CH)
P4507
(1 Pin)
P4504
P4503
SPEAKER (L-CH)
P4505
P4502
CAPSTAN MOTOR ASS'Y
CN3
CN1
CN2
(12 Pins)
P6201
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
P3503
P3501
(15 Pins)
P3001
FULL ERASE HEAD UNIT
PIN
(2 Pins)
P4001
P4005
P4701 (19 Pins)
OPERATION C.B.A.
㉘
(5 Pins)
P4591
VIDEO IN 2
AUDIO IN 2 R CH
AUDIO IN 2 L CH
S-VIDEO IN 2 JACK
P4701
EARPHONE JACK

PV-DF2002
INTERCONNECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (POWER SUPPLY/VIDEO/AUDIO SECTION)

MODE PIN NO.	STOP
IC3001	
1	5.0
2	0.3
3	2.1
4	5.0
5	0.2
6	---
7	0.2
8	0.1
9	2.2
10	1.2
11	0.1
12	2.8
13	0
14	0.1
15	1.0
16	0.6
17	0.5
18	0.5
19	0.8
20	3.1
21	5.0
22	0.3
23	2.6
24	2.5
25	2.0
26	2.5
27	2.0
28	0
29	0.2
30	0.4
31	2.0
32	0.3
33	0.3
34	2.8
35	---
36	0.3
37	0.3
38	0.3
39	2.2
40	3.4
41	2.8
42	0
43	3.3
44	2.5
45	2.6
46	2.5
47	5.0
48	---
49	0
50	---
51	5.0
52	2.5
53	2.5
54	1.1
55	2.1
56	4.3
57	2.5
58	2.6
59	2.5
60	2.5
61	2.5
62	0
63	0
64	1.2
65	2.5
66	2.6
67	2.6
68	5.0
69	2.6
70	0
71	---
72	2.6
73	0.4
74	0
75	2.1
76	3.3
77	0
78	2.0
79	2.4
80	2.1
81	2.5
82	2.8
83	2.6
84	2.4
IC3201	
1	3.3
2	5.0
3	0
4	3.4
5	2.9
6	-4.0
7	2.1
8	3.3
IC3301	
1	0
2	2.6
3	5.1
4	0
5	2.4
6	2.7
7	5.0
8	0.1
9	0
10	0
11	0
12	0
13	-0.2
14	2.8
15	0.1
16	---
17	0.1
18	0.1
19	0
20	2.5
21	3.2
22	3.2
23	---
24	---
25	---
26	---
27	---
28	---
29	0.1
30	0.1
31	0.1
32	0.2
33	---
34	---
35	---
36	---
37	---
38	0.5
39	0.4
40	0.4
41	0.4
42	---
43	0.1
44	0.1
45	4.9
46	---
47	---
48	---
IC3302	
1	2.4
2	0
3	3.7
4	0
5	0.1
6	5.0
7	1.7
8	0
IC5101	
1	0
2	5.0
3	0
4	0
5	0
6	0
7	0
8	5.2
9	5.2
10	5.2
11	0
12	2.4
13	0
14	2.2
15	2.1
16	3.4
17	3.4
18	2.1
19	0
20	2.4
21	1.5
22	0.5
23	5.0
24	1.4
25	2.4
26	2.4
27	3.5
28	0.7
IC5301	
1	0.1
2	0.1
3	0
4	0
5	0
6	2.0
7	0.1
8	0.4
9	0
10	3.8
11	5.2
12	0
13	4.1
14	3.2
15	0.3
16	0.8
17	0.1
18	0
19	1.7
20	0
21	3.4
22	3.3
23	0.5
24	9.0
25	3.4
26	8.9
27	0
28	0
29	9.0
30	5.7
31	6.1
32	3.5
33	7.1
34	8.0
35	5.0
36	4.2
37	9.6
38	9.0
39	2.2
40	1.8
41	2.3
42	0
43	5.2
44	5.2
45	---
46	2.6
47	0.8
48	2.8
IC5302	
1	3.1
2	0
3	3.1
4	0
5	3.1
6	5.0
7	2.3
8	0
IC5351	
1	3.0
2	0
3	3.1
4	4.9
5	3.0
6	5.0
7	2.3
8	0
IC5361	
1	2.4
2	0
3	0.3
4	0
5	3.7
6	5.0
7	1.7
8	0
Q3001	
E	1.6
C	0
B	1.0
Q3002	
E	1.8
C	5.0
B	2.4
Q3004	
E	1.7
C	0
B	1.1
Q3301	
E	2.3
C	0
B	1.7
Q3305	
E	0
C	4.6
B	0.1
Q4001	
E	5.0
C	5.0
B	4.3
Q4002	
E	0
C	0
B	0.7
Q4003	
E	0
C	0
B	0.8
Q4101	
E	0
C	0
B	0.5
Q4171	
E	0
C	0
B	0.1
Q5101	
E	3.3
C	9.0
B	4.0
Q5104	
E	2.9
C	9.0
B	3.5
Q5105	
E	2.4
C	0
B	1.7
Q5107	
E	2.3
C	9.0
B	3.0
Q5108	
E	1.2
C	0
B	0.5
Q5110	
E	2.3
C	9.0
B	2.9
Q5114	
E	2.0
C	0
B	1.4
Q5118	
E	1.5
C	5.0
B	1.5
Q5119	
E	2.1
C	0
B	1.5
Q5120	
E	1.8
C	4.2
B	2.4
Q5121	
E	3.6
C	0
B	4.2
Q5125	
E	3.0
C	0
B	2.3
Q5151	
E	3.1
C	4.7
B	3.8
Q5152	
E	4.1
C	9.0
B	4.7
Q5301	
E	4.3
C	0
B	3.7
Q5302	
E	6.8
C	9.0
B	7.4
TP3001	1.6
TP3002	2.4
TP3003	3.4
TP3004	2.0
TP3005	0
TP3006	2.5
TP3007	3.3
TP3008	2.4
TP3009	0
TP3010	3.0
TP3011	2.7
TP3012	1.7
TP3013	8.4
TP3014	8.3
TP3019	0
TP3212	2.9
TP3301	2.8
TP3302	5.0
TP4001	0.3
TP4002	0
TP4003	0
TP4004	0
TP4011	0
TP4014	0
TP5301	3.2
TP5302	3.1
TP5303	3.2
TP5305	4.1
TP5307	1.7
TP5308	2.2
TP5309	1.6
TP5310	0
TP5311	3.5
TP5312	3.3
TP5313	0.2
TP5401	3.8
TP5402	1.8
TP5501	0.8
TP5503	1.6
TP5504	0
TP5505	0
TP5506	5.6

VOLTAGE CHART
PV-DF2002

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A. (SYSTEM CONTROL/SERVO SECTION)

MODE PIN NO.	REC	PLAY
IC6001		
1	5.3	5.3
2	5.1	5.1
3	5.2	5.2
4	5.2	5.2
5	5.2	5.2
6	0	5.2
7	0	0
8	5.2	5.2
9	0.4	4.3
0	0	5.2
11	1.5	1.9
12	1.7	0.2
13	0	0
14	4.9	4.9
15	4.9	0.4
16	4.9	4.9
17	5.2	5.2
18	5.1	5.1
19	0	0
20	5.2	5.2
21	5.1	5.1
22	0	0
23	2.6	2.6
24	0	0
25	5.1	5.1
26	0	2.6
27	0	2.6
28	0	0
29	5.1	0
30	0.1	0.6
31	0	0
32	0.2	0
33	0.3	2.7
34	2.6	2.6
35	0	0
36	5.0	5.0
37	2.4	2.4
38	2.4	2.4
39	0	0
40	0.3	0.3
41	5.0	5.0
42	0	0
43	4.3	4.3
44	4.8	4.8
45	1.8	1.3
46	5.1	5.2
47	0	0
48	0	0
49	0	0
50	2.7	0.8
51	5.0	5.0
52	4.5	0.2
53	0	0
54	0	0

MODE PIN NO.	REC	PLAY
55	0	0
56	5.0	5.0
57	2.1	1.6
58	5.2	5.2
59	0	0
60	2.7	2.5
61	0	0
62	0	5.2
63	0	5.1
64	0.1	0
65	0.8	1.4
66	2.5	1.5
67	4.6	0.2
68	0	0
69	2.6	0.3
70	2.6	2.6
71	0	0
72	0	2.6
73	5.0	5.0
74	0	2.6
75	2.6	2.6
76	2.6	2.6
77	0.1	0.2
78	0.1	0.2
79	0	0
80	5.1	5.1
81	5.1	0.4
82	3.4	3.4
83	0	0
84	2.6	2.6
85	5.2	5.3
86	5.2	5.3
87	5.2	5.2
88	5.2	5.2
89	5.2	0.4
90	0	0
91	5.2	5.2
92	5.1	5.1
93	0.6	5.1
94	5.1	5.1
95	5.2	5.2
96	0	0
97	0.4	0.4
98	2.6	2.6
99	5.2	5.2
100	0.1	0.1
IC6002		
E	0	0
C	5.1	0.2
A	1.2	1.2
K	0	0
IC6003		
E	0	0
C	0.2	0.2
A	2.4	2.4

MODE PIN NO.	REC	PLAY
K	0	0
IC6004		
1	0	0
2	0	0
3	0	0
4	0	0
5	5.2	5.2
6	5.2	5.2
7	0	0
8	5.0	5.0
IC6005		
1	0.3	5.2
2	5.0	5.0
3	0	0
4	0	0
5	5.0	5.0
6	0	0
Q6001		
E	12.0	12.0
C	0.5	0.5
B	12.0	12.0
Q6002		
E	0	0
C	12.0	12.0
B	0	0
Q6003		
E	0	0
C	0.2	0.2
B	0.8	0.8
Q6004		
E	5.0	5.0
C	5.2	5.2
B	4.5	4.5
Q6005		
E	5.0	5.0
C	5.0	5.0
B	4.4	4.4
Q6006		
E	0	0
C	5.2	5.2
B	0	0
Q6009		
E	0	0
C	5.2	5.1
Q6010		
E	0	0
C	5.1	5.1
TP6001	5.2	5.2
TP6002	5.2	5.2
TP6003	3.4	3.4
TP6004	5.0	5.0
TP6005	5.1	5.1
TP6006	0	0

MODE PIN NO.	REC	PLAY
TP6007	5.2	5.2
TP6008	0	0
TP6009	5.0	5.0
TP6013	0	0
TP6021	5.1	5.1
TP6022	5.1	5.1
TP6023	0	0
TP6099	5.2	5.2
TP6101	5.1	5.1
TP6103	4.9	4.9
TP6104	5.0	5.0
TP6105	5.1	5.1
TP6106	5.2	5.2
TP6107	0	0
TP6108	2.0	2.0
TP6109	5.0	5.0
TP6111	0	0
TP6201	2.7	2.7
TP6202	2.6	2.6
TP6203	4.6	4.6
TP6204	0.1	0.1
TP6205	2.6	2.6
TP6206	3.0	3.0
TP6207	2.6	2.6
TP6208	1.1	1.1
TP6209	2.0	2.0
TP6401	0.2	0.2

VOLTAGE CHART
PV-DF2002

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

POWER SUPPLY C.B.A.

MODE PIN NO.	STOP
IC1001	
1	5.2
2	4.2
3	0.6
4	0.1
IC1002	
1	0
2	0
3	4.2
IC1501	
1	177.2
2	0
3	0
4	13.4
5	0
IC1502	
1	5.1
2	4.0
3	2.3
4	13.3
IC1503	
1	2.6
2	0
3	4.0
IC9551	
1	0
2	0
3	0
4	-5.1
5	0
6	0
7	0
8	5.0
Q1001	
E	0
C	162.2
B	0.3
Q1002	
E	0
C	0.3
B	0.6
Q1051	
E	12.0
C	14.0
B	12.7
Q1052	
E	0
C	0.1
B	0
Q1053	
E	5.0
C	5.0
B	5.6

MODE PIN NO.	STOP
Q1070	
E	12.0
C	11.9
B	11.6
Q1071	
E	-5.1
C	-5.1
B	6.4
Q1080	
E	30.0
C	30.0
B	0
Q1081	
E	0
C	30.0
B	0
Q1501	
E	0
C	0
B	0
Q1503	
E	12.0
C	12.0
B	0
Q1504	
E	0
C	0
B	12.0
Q1505	
E	30.0
C	0
B	0
Q1506	
E	0
C	0
B	5.0
Q1508	
1	5.0
2	5.0
3	5.0
4	0
5	5.0
6	5.0
7	5.0
8	5.0
Q7001	
E	2.2
C	0
B	1.5
Q9501	
E	5.1
C	12.0
B	5.7
Q9502	
E	5.1

MODE PIN NO.	STOP
C	12.0
B	5.7
Q9503	
E	3.3
C	9.4
B	3.9
Q9504	
E	8.6
C	12.0
B	9.2
TP1001	30.0
TP1071	-5.1
TP1509	12.0
TP1511	5.0
TP9501	0
TP9502	0
TP9551	0
TP9552	0
TP9553	0
TP9554	0

AUDIO C.B.A.

MODE PIN NO.	STOP
IC4201	
1	2.6
2	2.5
3	2.5
4	2.5
5	2.5
6	5.1
7	2.6
8	1.6
9	0
10	2.6
11	2.6
12	2.6
13	2.3
14	---
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	---
25	2.6
26	2.6
27	2.6
28	0
29	1.6
30	0
31	5.2
32	0
33	0
34	0
35	2.5
36	---
37	2.5
38	2.6
39	12.2
40	0
41	---
42	0
43	0
44	0
45	6.1
46	6.1
47	---
48	---
IC4301	
1	0
2	0
3	0
4	0
5	0

MODE PIN NO.	STOP
6	0
7	0
8	0
9	0
10	12.3
11	0
12	15.0
13	16.0
14	0
15	---
16	12.3
IC4302	
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	12.3
IC4601	
1	0.1
2	4.5
3	4.5
4	4.5
5	4.5
6	4.5
7	0
8	0
9	0
10	5.2
11	5.2
12	0.4
13	0.4
14	2.0
15	2.0
16	9.0
17	4.5
18	4.5
19	4.5
20	4.5
21	4.5
22	0
IC5651	
1	0
2	0.1
3	2.9
4	2.5
5	1.4
6	0
7	0
8	5.2
9	0
10	2.5
11	2.3

MODE PIN NO.	STOP
12	3.5
13	4.0
14	1.7
15	3.6
16	5.1
IC9001	
1	3.8
2	4.1
3	2.9
4	9.1
5	1.4
6	0
7	3.4
8	4.5
9	1.3
10	3.5
11	4.6
12	4.6
13	4.2
14	4.2
15	4.0
16	4.2
17	0
18	0.7
19	4.2
20	4.1
21	1.8
22	4.2
23	4.2
24	4.2
25	4.2
26	1.8
27	4.2
28	4.1
29	4.2
30	4.1
IC9201	
1	2.9
2	3.6
3	5.1
4	4.4
5	0
6	5.1
7	4.4
8	3.0
9	3.1
Q4301	
E	12.0
C	14.0
B	12.7
Q4302	
E	5.9
C	12.0
B	6.5

MODE PIN NO.	STOP
Q4303	
E	0
C	0
B	0.1
Q4304	
E	12.0
C	0
B	12.0
Q4305	
E	0
C	12.0
B	0
Q5651	
E	1.8
C	0
B	1.3
Q5652	
E	1.1
C	4.2
B	1.7
Q5653	
E	2.4
C	0
B	1.8
Q5654	
E	2.5
C	0
B	1.9
Q5655	
E	3.0
C	9.1
B	4.0
Q5656	
E	3.3
C	9.1
B	4.0
Q9001	
E	0.6
C	5.2
B	1.2
Q9002	
E	1.3
C	0.6
B	0.6
TP4201	0
TP4202	0
TP4205	0
TP4206	0
TP4207	0
TP4208	0
TP5651	2.4
TP5652	0
TP9001	0
TP9002	0

MODE PIN NO.	STOP
TP9003	0
TP9201	0.6

AUDIO AMP C.B.A.

MODE PIN NO.	STOP
IC4501	
1	2.1
2	2.3
3	0
4	2.3
5	2.1
6	7.1
7	10.4
8	2.3
9	21.0
10	0
11	2.3
12	10.1
Q4501	
E	0
C	0
B	0.1
Q4502	
E	0
C	0
B	0.1
Q4503	
E	21.0
C	27.0
B	21.6
TP4501	27.0
TP4502	0
TP4504	0
TP4505	0
TP4506	9.6
TP4507	6.9

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

CRT C.B.A.

MODE PIN NO.	STOP
IC351	
1	2.1
2	2.1
3	2.1
4	0
5	2.2
6	214.4
7	180.6
8	181.7
9	180.6
TP46	0
TP47	-3.0
TP48	0
TP49	0
TP50	162.8

TV MAIN C.B.A.

MODE PIN NO.	STOP
IC451	
1	11.6
2	3.8
3	5.8
4	6.1
5	0
6	6.0
7	5.5
8	27.0
9	24.5
10	1.8
11	0
12	13.7
13	25.1
IC501	
1	0
2	0
3	0
4	12.0
IC502	
1	1.7
2	0
3	0
4	130.0
IC1301	
1	0.1
2	0.1
3	0.5
4	0.5
IC1302	
1	0.1
2	0
3	2.1
Q431	
E	2.9
C	0
B	2.2
Q501	
E	0
C	82.7
B	0
Q551	
E	0
C	393.4
B	0
Q571	
E	1.7
C	10.6
B	2.1
Q581	
E	130.0
C	0
B	120.5

MODE PIN NO.	STOP
Q801	
E	0
C	0
B	0.8
Q1301	
E	0
C	0.3
B	0.5
Q1302	
E	0
C	160.8
B	0.3
TP501	120.9
TP502	0
TP551	-14.3
TP552	-15.7
TP556	200.0
TP558	24.2
TP559	16.0
TP808	0
TP809	0
TP810	0
TP891	130.0
TP892	130.0
TP893	0

OPERATION C.B.A.

MODE PIN NO.	STOP
IC4701	
1	0
2	0
3	0
4	-5.1
5	0
6	0
7	0
8	5.0
Q4710	
E	5.1
C	12.0
B	5.7
Q4711	
E	5.1
C	12.0
B	5.7
Q4712	
E	3.3
C	9.4
B	3.9
Q4713	
E	8.6
C	12.0
B	9.2
TP4591	0
TP4592	0
TP4701	0
TP4702	0
TP4710	0
TP4711	0

DVD DECODER C.B.A.

MODE PIN NO.	STOP
IC8000	
1	3.6
2	1.5
3	1.3
4	1.2
5	1.4
6	1.2
7	1.4
8	0
9	3.6
10	1.9
11	1.3
12	0.3
13	0.2
14	1.2
15	1.7
16	1.7
17	0
18	3.6
19	1.0
20	0.2
21	1.2
22	0
23	0
24	3.6
25	0.1
26	0
27	3.6
28	2.8
29	2.6
30	2.7
31	0.1
32	0.1
33	1.9
34	0
35	3.6
36	0.4
37	0.4
38	0.4
39	0.4
40	0.4
41	0.4
42	0.4
43	0
44	3.6
45	0.4
46	0.4
47	0.4
48	0.3
49	0.5
50	---
51	3.6
52	0
53	0.5
54	0.5

MODE PIN NO.	STOP
55	0.5
56	0.5
57	0.5
58	0.5
59	3.6
60	0
61	0.5
62	0.5
63	0.5
64	0.5
65	0.4
66	0.4
67	0
68	3.6
69	0.5
70	0.5
71	0.5
72	0.5
73	0.5
74	0.5
75	3.6
76	0
77	0.4
78	0.4
79	0.4
80	0.4
81	0.4
82	0.4
83	3.6
84	0
85	0.4
86	0.4
87	0.4
88	0.4
89	0.4
90	0.4
91	0
92	3.6
93	0.3
94	0.3
95	0.3
96	0.3
97	0.4
98	0
99	3.6
100	0.4
101	0.4
102	0.4
103	0
104	3.6
105	0.4
106	0.4
107	0.4
108	0.4
109	0.4

MODE PIN NO.	STOP
110	0.4
111	3.6
112	0
113	0.4
114	0.3
115	0.3
116	0.5
117	0.4
118	0.3
119	0.3
120	0
121	3.6
122	0.4
123	0.4
124	0.4
125	0.4
126	0.4
127	0.4
128	0.4
129	0
130	3.6
131	0.4
132	0.8
133	0.4
134	0.4
135	0.4
136	0.4
137	0.4
138	0
139	3.6
140	0.4
141	0.4
142	0.3
143	0.3
144	0.2
145	0.3
146	0.5
147	0
148	3.6
149	0.4
150	0.4
151	0.4
152	0.8
153	0.3
154	0.4
155	0.4
156	0
157	3.6
158	0.4
159	5.0
160	0.4
161	0.4
162	0.4
163	0
164	3.6

MODE PIN NO.	STOP
165	0.4
166	1.2
167	0.4
168	1.1
169	0.4
170	0.3
171	0
172	3.6
173	---
174	0.3
175	0.3
176	0
177	0
178	0.4
179	0.4
180	0.4
181	0.4
182	0.4
183	3.6
184	0
185	0.4
186	0.4
187	0.4
188	0.4
189	0.4
190	0.4
191	0.4
192	0
193	3.6
194	0.4
195	0.4
196	0.4
197	0.4
198	0.3
199	---
200	0
201	3.6
202	---
203	---
204	0.3
205	0.3
206	0.4
207	0.4
208	0
IC8001	
1	0
2	0
3	0
4	0
5	0.4
6	0.4
7	0
8	5.0
IC8002	
1	0

MODE PIN NO.	STOP
2	0.4
3	0.4
4	0.4
5	0.3
6	0.3
7	0.4
8	0.4
9	0.3
10	0
11	0.3
12	0.3
13	0.4
14	0.4
15	0.3
16	0.3
17	0.4
18	0.4
19	---
20	5.0
IC8003	
1	0
2	3.6
3	0.5
4	0.5
5	0
IC8100	
1	3.6
2	0.7
3	3.6
4	0.6
5	0.9
6	0
7	1.0
8	1.2
9	3.6
10	0.9
11	0.9
12	0
13	1.2
14	3.6
15	0
16	3.5
17	3.5
18	3.5
19	0
20	0.1
21	0
22	0.1
23	1.3
24	1.2
25	1.0
26	1.9
27	3.6
28	0
29	0.1

MODE PIN NO.	STOP
30	1.6
31	1.5
32	1.0
33	1.0
34	0.2
35	3.2
36	---
37	3.6
38	1.5
39	0
40	---
41	0
42	0.8
43	3.6
44	0.8
45	0.9
46	0
47	0.5
48	0.5
49	3.6
50	0.8
51	0.9
52	0
53	1.3
54	0
IC8200	
1	0.4
2	0.3
3	0.3
4	0.3
5	0
6	0
7	0
8	0
9	0
10	0
11	0.4
12	0
13	0
14	0
15	0.3
16	0.3
17	0.4
18	0
19	0
20	0.4
21	0
22	0.1
23	0.4
24	0.4
25	0.2
26	0
27	0
28	0.4
29	0

MODE PIN NO.	STOP
30	0.4
31	0
32	0.3
33	0.1
34	0
35	0
36	0.3
37	0.3
38	0.3
39	0.3
40	0.3
41	0.3
42	0.4
43	0
44	0.4
IC8201	
1	0
2	5.1
3	3.7
IC8301	
1	2.2
2	2.5
3	0.1
4	0.6
5	0.1
6	0.6
7	0.6
8	0.6
9	---
10	---
11	0.6
12	0.1
13	---
14	---
15	0.4
16	0.6
17	0.1
18	0.1
19	0.1
20	0
21	0
22	0
23	0
24	0.1
25	0.9
26	3.6
27	0
28	3.6
29	0.9
30	---
31	0.8
32	---
33	1.0
34	---
35	0.9

VOLTAGE CHART
PV-DF2002

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

MODE PIN NO.	STOP
36	---
37	3.6
38	0.9
39	---
40	0.2
41	---
42	0.9
43	---
44	0
45	0
46	0
47	0
48	0
IC8401	
1	6.1
2	6.1
3	6.1
4	0
5	6.1
6	6.1
7	6.1
8	12.2
IC8403	
1	0.4
2	0.4
3	5.0
4	---
5	---
6	0.3
7	0.3
8	0.3
9	0.3
10	0.3
11	0.1
12	0
13	5.0
14	0
15	0.3
16	0.4
17	0.4
18	0.4
19	---
20	---
21	5.0
22	0
23	0
24	0
IC8502	
1	0
2	0.3
3	0.5
4	0
5	0.3
6	0.5
7	0

MODE PIN NO.	STOP
8	---
9	0
10	0
11	0.4
12	0.3
13	0
14	3.6
Q8000	
E	0.7
C	0.7
B	0.5
Q8003	
E	0
C	0
B	4.0
Q8200	
E	0.1
C	0
B	0.5
Q8201	
E	0.3
C	0
B	0.2
Q8202	
E	0.3
C	0
B	0.5
Q8204	
E	0
C	0
B	0.1
Q8205	
E	0.1
C	0
B	0.4
Q8206	
E	0
C	0
B	0
Q8207	
E	1.9
C	0
B	0.6
Q8208	
E	1.6
C	0
B	0.9
TP8000	0.4
TP8001	0.1
TP8002	3.6
TP8003	0.4
TP8004	0.4
TP8005	0.3

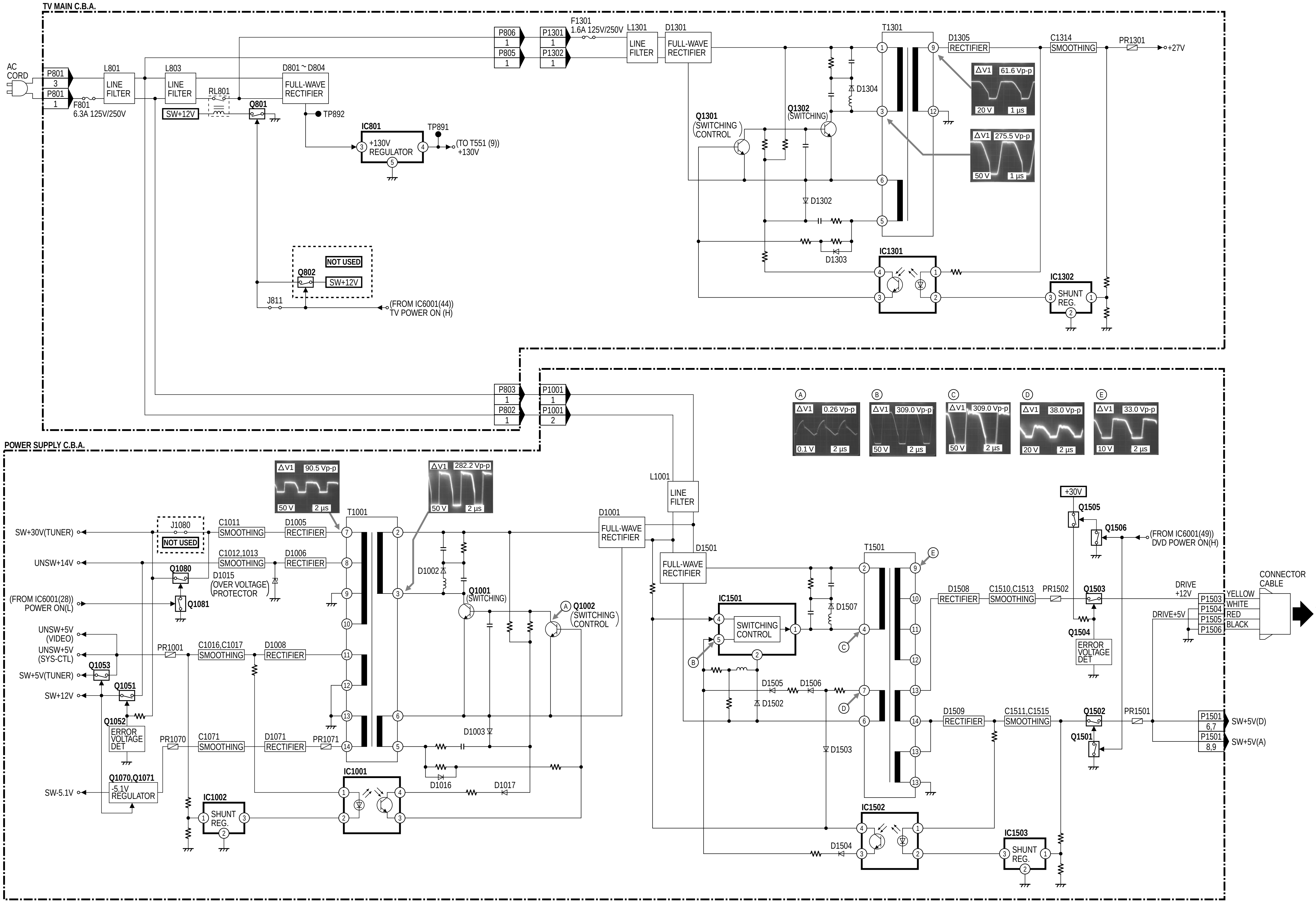
MODE PIN NO.	STOP
TP8006	0.5
TP8007	0.1
TP8008	0.2
TP8009	0.3
TP8010	0.2
TP8011	0.2
TP8012	5.0
TP8013	0.7
TP8014	0
TP8015	0.4
TP8016	0
TP8017	0
TP8018	0.4
TP8019	4.4
TP8020	0.4
TP8021	0
TP8022	5.0
TP8023	0.1
TP8024	0
TP8025	0.2
TP8026	0.4
TP8027	0.1
TP8028	0
TP8029	0
TP8030	0.4
TP8031	0.3
TP8032	0.3
TP8033	0.3
TP8034	0.4
TP8035	0.4
TP8036	0.4
TP8037	0.1
TP8038	0
TP8039	0.1
TP8040	0.4
TP8041	0.4
TP8042	0.4
TP8043	0
TP8044	0.4
TP8045	0
TP8046	0.1
TP8047	0
TP8048	0
TP8049	0
TP8051	5.0
TP8052	0.4
TP8053	0.1
TP8054	0.1
TP8055	0.3
TP8056	0.1
TP8057	0.1
TP8058	0.1
TP8059	0.1
TP8060	0.1
TP8061	0.1

MODE PIN NO.	STOP
TP8062	0.4
TP8063	0.4
TP8065	0.1
TP8068	0.5
TP8069	0
TP8070	0.1
TP8071	0.1
TP8072	0.1
TP8100	3.6
TP8200	0.6
TP8201	0
TP8202	0.5
TP8203	0
TP8204	0.1
TP8205	0.4
TP8206	0.1
TP8207	0.1
TP8208	0.1
TP8209	0
TP8210	0.4
TP8211	0.4
TP8212	0.4
TP8213	0.4
TP8214	0.1
TP8215	0.1
TP8216	0.1
TP8300	0
TP8301	3.6
TP8302	0.4
TP8303	0.3
TP8304	0.4
TP8305	0.4
TP8306	0.4
TP8307	0.4
TP8308	0.4
TP8309	0.4
TP8310	0.4
TP8311	0.1
TP8312	0.3
TP8313	0.3
TP8315	0.1
TP8316	0
TP8317	0
TP8318	0.1
TP8319	0
TP8320	0
TP8321	0.5
TP8322	0
TP8323	0.5
TP8324	0.5
TP8325	0.1
TP8326	0
TP8327	0.1
TP8328	0
TP8329	0.4

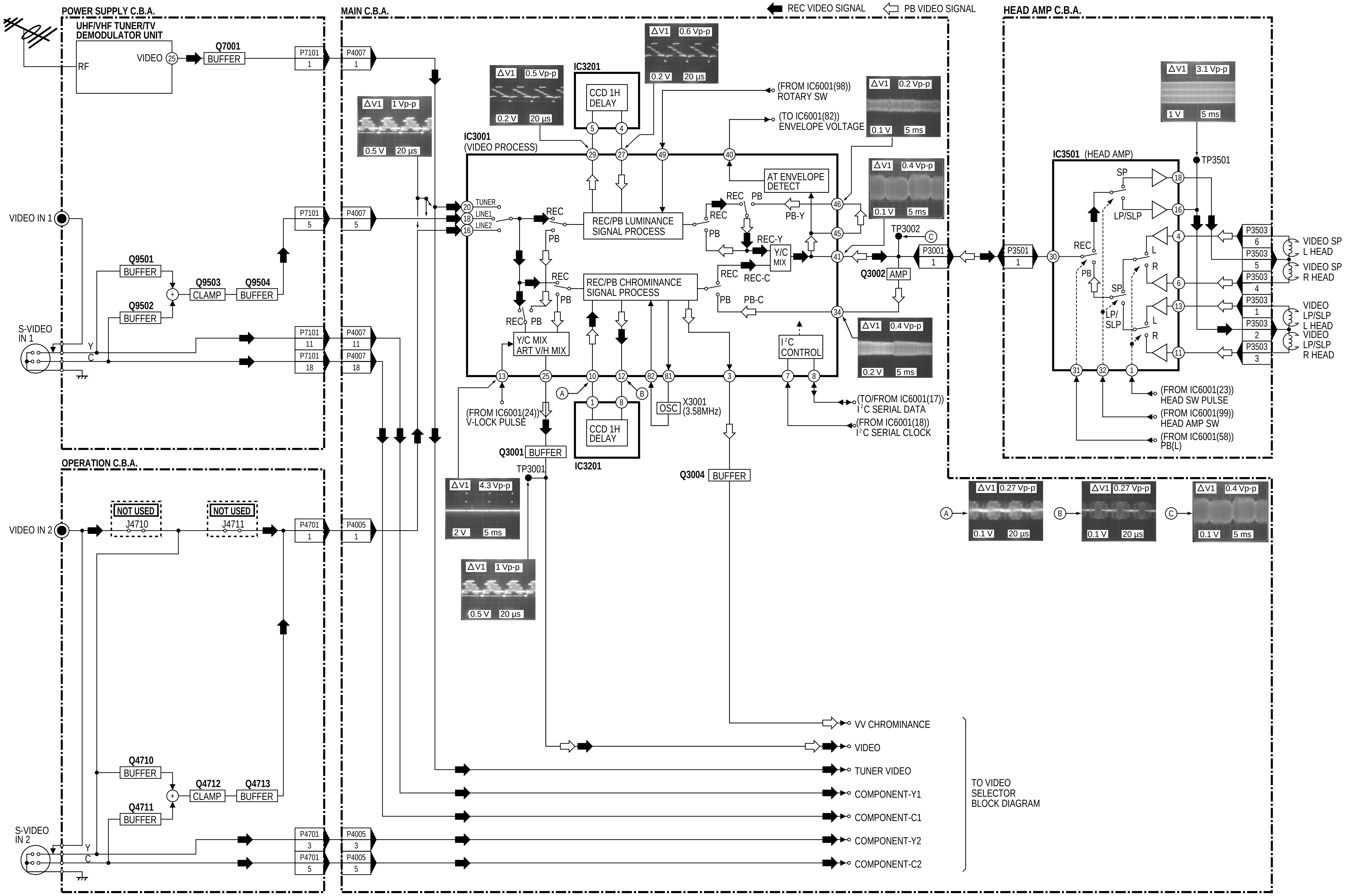
MODE PIN NO.	STOP
TP8330	0.1
TP8331	0.1
TP8332	0
TP8334	0
TP8335	0
TP8398	0.5
TP8399	0.5
TP8400	0.1
TP8401	0.1
TP8405	0
TP8407	0
TP8408	0.1
TP8415	0.3
TP8416	0.2
TP8417	0
TP8418	0
TP8419	0
TP8420	0
TP8421	0.4
TP8422	0.4
TP8423	0
TP8424	0
TP8501	0.3
TP8502	0.1
TP8503	0.1
TP8504	0.4
TP8505	0.1
TP8506	0.3

MODE PIN NO.	STOP
IC3501	
1	0
2	0
3	0.5
4	0
5	0
6	0
7	0.5
8	0
9	0
10	0.5
11	0
12	0
13	0.1
14	0.1
15	---
16	2.4
17	2.4
18	0
19	---
20	---
21	---
22	---
23	---
24	---
25	0.2
26	5.1
27	0
28	0
29	0
30	2.5
31	5.2
32	4.9
33	0.2
34	0.1
35	11.9
36	0.1
IC4401	
1	0
2	4.0
3	0.6
4	0
5	4.0
6	4.0
7	1.0
8	0.7
9	2.6
10	5.1
11	0
12	0
13	3.9
14	3.9
15	0.1
16	13.0

POWER SUPPLY BLOCK DIAGRAM

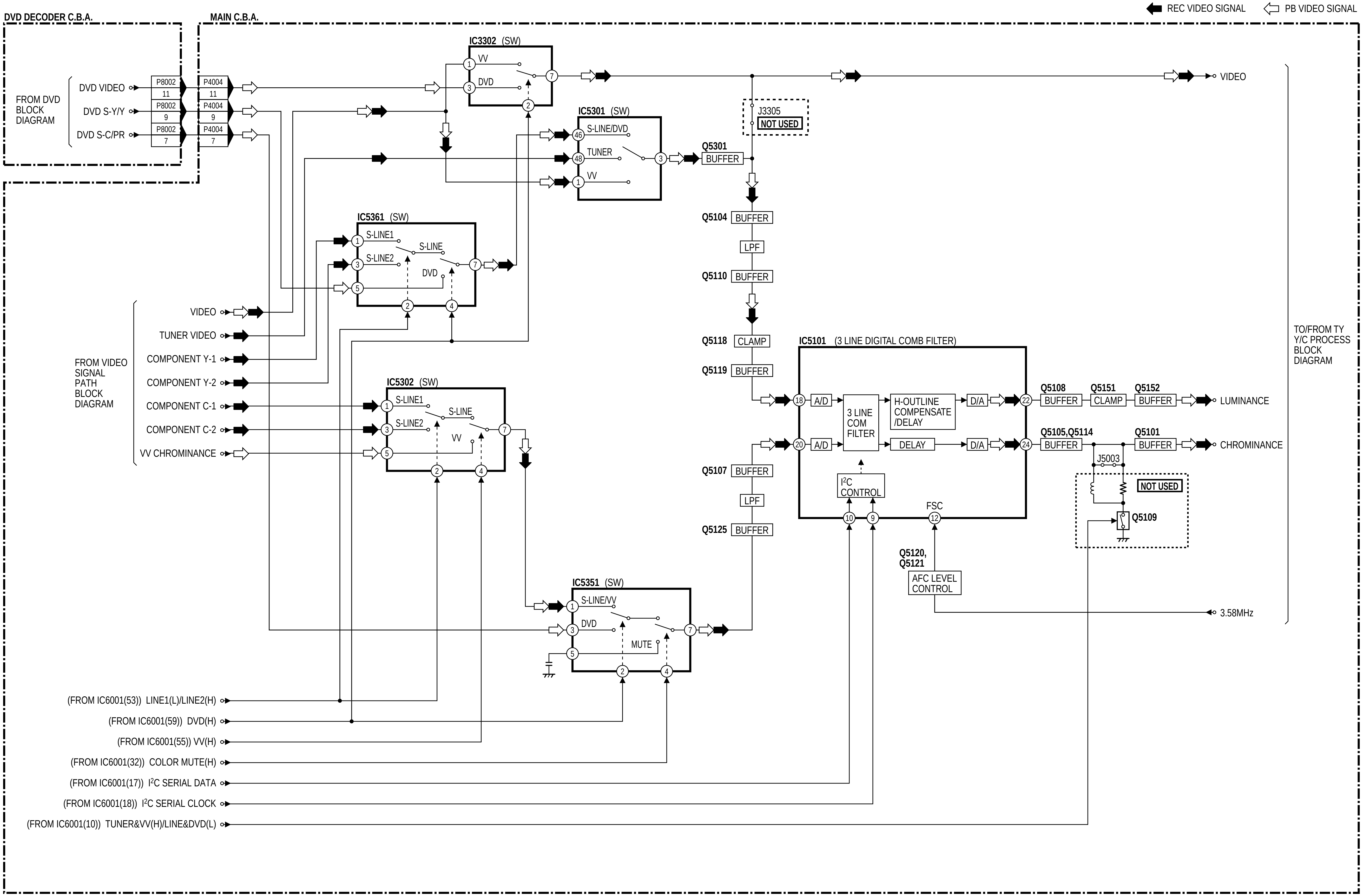

TV MAIN C.B.A.
AC CORD
P801 3
P801 1
F801 6.3A 125V/250V
L801 LINE FILTER
L803 LINE FILTER
RL801
SW+12V
Q801
D801 ~ D804 FULL-WAVE RECTIFIER
TP892
IC801 +130V REGULATOR
TP891
(TO T551 (9)) +130V
NOT USED
Q802
SW+12V
J811
(FROM IC6001(44)) TV POWER ON (H)
P806 1
P805 1
P1301 1
P1302 1
F1301 1.6A 125V/250V
L1301 LINE FILTER
D1301 FULL-WAVE RECTIFIER
Q1301 (SWITCHING CONTROL)
Q1302 (SWITCHING)
D1304
D1302
D1303
T1301
D1305 RECTIFIER
C1314 SMOOTHING
PR1301
+27V
ΔV1 61.6 Vp-p 20 V 1 µs
ΔV1 275.5 Vp-p 50 V 1 µs
IC1301
IC1302 SHUNT REG.
P803 1
P802 1
P1001 1
P1001 2
POWER SUPPLY C.B.A.
Ⓐ ΔV1 0.26 Vp-p 0.1 V 2 µs
Ⓑ ΔV1 309.0 Vp-p 50 V 2 µs
Ⓒ ΔV1 309.0 Vp-p 50 V 2 µs
Ⓓ ΔV1 38.0 Vp-p 20 V 2 µs
Ⓔ ΔV1 33.0 Vp-p 10 V 2 µs
ΔV1 90.5 Vp-p 50 V 2 µs
ΔV1 282.2 Vp-p 50 V 2 µs
SW+30V(TUNER)
UNSW+14V
(FROM IC6001(28)) POWER ON(L)
UNSW+5V (VIDEO)
UNSW+5V (SYS-CTL)
SW+5V(TUNER)
SW+12V
SW-5.1V
J1080 NOT USED
Q1080
Q1081
Q1053
Q1051
Q1052 ERROR VOLTAGE DET
Q1070,Q1071 -5.1V REGULATOR
C1011 SMOOTHING
D1005 RECTIFIER
C1012,1013 SMOOTHING
D1006 RECTIFIER
D1015 (OVER VOLTAGE PROTECTOR)
PR1001
C1016,C1017 SMOOTHING
D1008 RECTIFIER
PR1070
C1071 SMOOTHING
D1071 RECTIFIER
PR1071
IC1002 SHUNT REG.
IC1001
T1001
D1002
Q1001 (SWITCHING)
Q1002 (SWITCHING CONTROL)
D1003
D1016
D1017
D1001 FULL-WAVE RECTIFIER
L1001 LINE FILTER
D1501 FULL-WAVE RECTIFIER
IC1501 SWITCHING CONTROL
D1507
D1505
D1506
D1502
D1503
D1504
T1501
IC1502
IC1503 SHUNT REG.
D1508 RECTIFIER
C1510,C1513 SMOOTHING
PR1502
Q1503
D1509 RECTIFIER
C1511,C1515 SMOOTHING
Q1502
PR1501
Q1501
+30V
Q1505
Q1506
(FROM IC6001(49)) DVD POWER ON(H)
Q1504 ERROR VOLTAGE DET
DRIVE +12V
DRIVE+5V
P1503 YELLOW
P1504 WHITE
P1505 RED
P1506 BLACK
CONNECTOR CABLE
TO DVD UNIT
P1501 6,7 SW+5V(D)
P1501 8,9 SW+5V(A)

VIDEO SIGNAL PATH BLOCK DIAGRAM



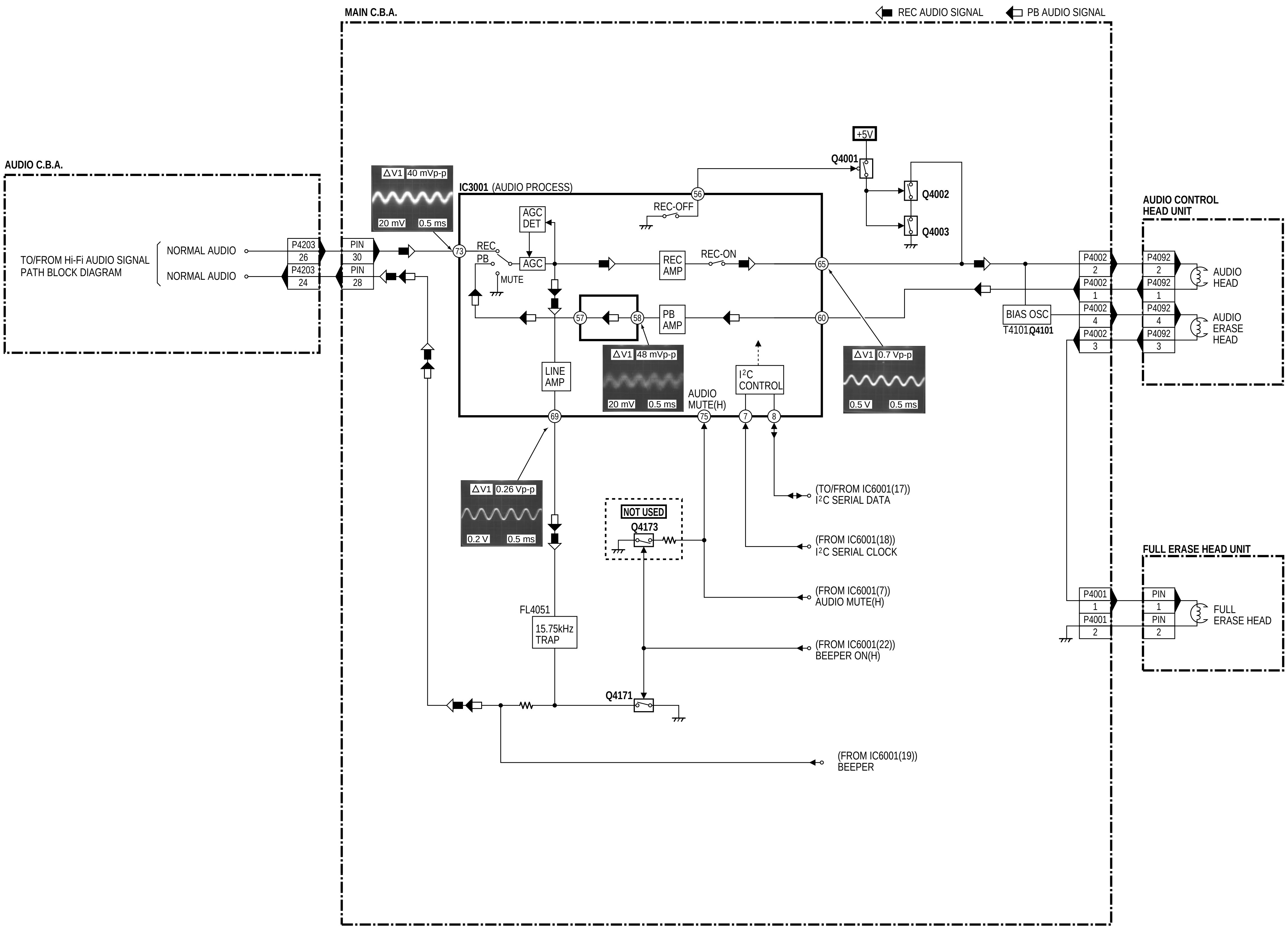
REC VIDEO SIGNAL
PB VIDEO SIGNAL
POWER SUPPLY C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT
RF
VIDEO 25
Q7001 BUFFER
P7101 1
P4007 1
MAIN C.B.A.
HEAD AMP C.B.A.
VIDEO IN 1
Q9501 BUFFER
Q9502 BUFFER
Q9503 CLAMP
Q9504 BUFFER
P7101 5
P4007 5
S-VIDEO IN 1
Y
C
P7101 11
P4007 11
P7101 18
P4007 18
OPERATION C.B.A.
VIDEO IN 2
NOT USED J4710
NOT USED J4711
P4701 1
P4005 1
Q4710 BUFFER
Q4711 BUFFER
Q4712 CLAMP
Q4713 BUFFER
S-VIDEO IN 2
P4701 3
P4005 3
P4701 5
P4005 5
IC3001 (VIDEO PROCESS)
TUNER
LINE1
LINE2
REC
PB
REC/PB LUMINANCE SIGNAL PROCESS
REC/PB CHROMINANCE SIGNAL PROCESS
Y/C MIX ART V/H MIX
AT ENVELOPE DETECT
Y/C MIX
REC-Y
REC-C
PB-Y
PB-C
I²C CONTROL
IC3201 CCD 1H DELAY
OSC
X3001 (3.58MHz)
(FROM IC6001(98)) ROTARY SW
(TO IC6001(82)) ENVELOPE VOLTAGE
(FROM IC6001(24)) V-LOCK PULSE
(TO/FROM IC6001(17)) I²C SERIAL DATA
(FROM IC6001(18)) I²C SERIAL CLOCK
TP3002
Q3002 AMP
P3001 1
P3501 1
Q3001 BUFFER
TP3001
Q3004 BUFFER
IC3501 (HEAD AMP)
TP3501
SP
LP/SLP
L
R
P3503 6
P3503 5
P3503 4
P3503 1
P3503 2
P3503 3
VIDEO SP L HEAD
VIDEO SP R HEAD
VIDEO LP/SLP L HEAD
VIDEO LP/SLP R HEAD
(FROM IC6001(23)) HEAD SW PULSE
(FROM IC6001(99)) HEAD AMP SW
(FROM IC6001(58)) PB(L)
ΔV1 1 Vp-p 0.5 V 20 µs
ΔV1 0.5 Vp-p 0.2 V 20 µs
ΔV1 0.6 Vp-p 0.2 V 20 µs
ΔV1 0.2 Vp-p 0.1 V 5 ms
ΔV1 0.4 Vp-p 0.1 V 5 ms
ΔV1 0.4 Vp-p 0.2 V 5 ms
ΔV1 3.1 Vp-p 1 V 5 ms
ΔV1 4.3 Vp-p 2 V 5 ms
ΔV1 1 Vp-p 0.5 V 20 µs
A ΔV1 0.27 Vp-p 0.1 V 20 µs
B ΔV1 0.27 Vp-p 0.1 V 20 µs
C ΔV1 0.4 Vp-p 0.1 V 5 ms
VV CHROMINANCE
VIDEO
TUNER VIDEO
COMPONENT-Y1
COMPONENT-C1
COMPONENT-Y2
COMPONENT-C2
TO VIDEO SELECTOR BLOCK DIAGRAM

VIDEO SELECTOR BLOCK DIAGRAM

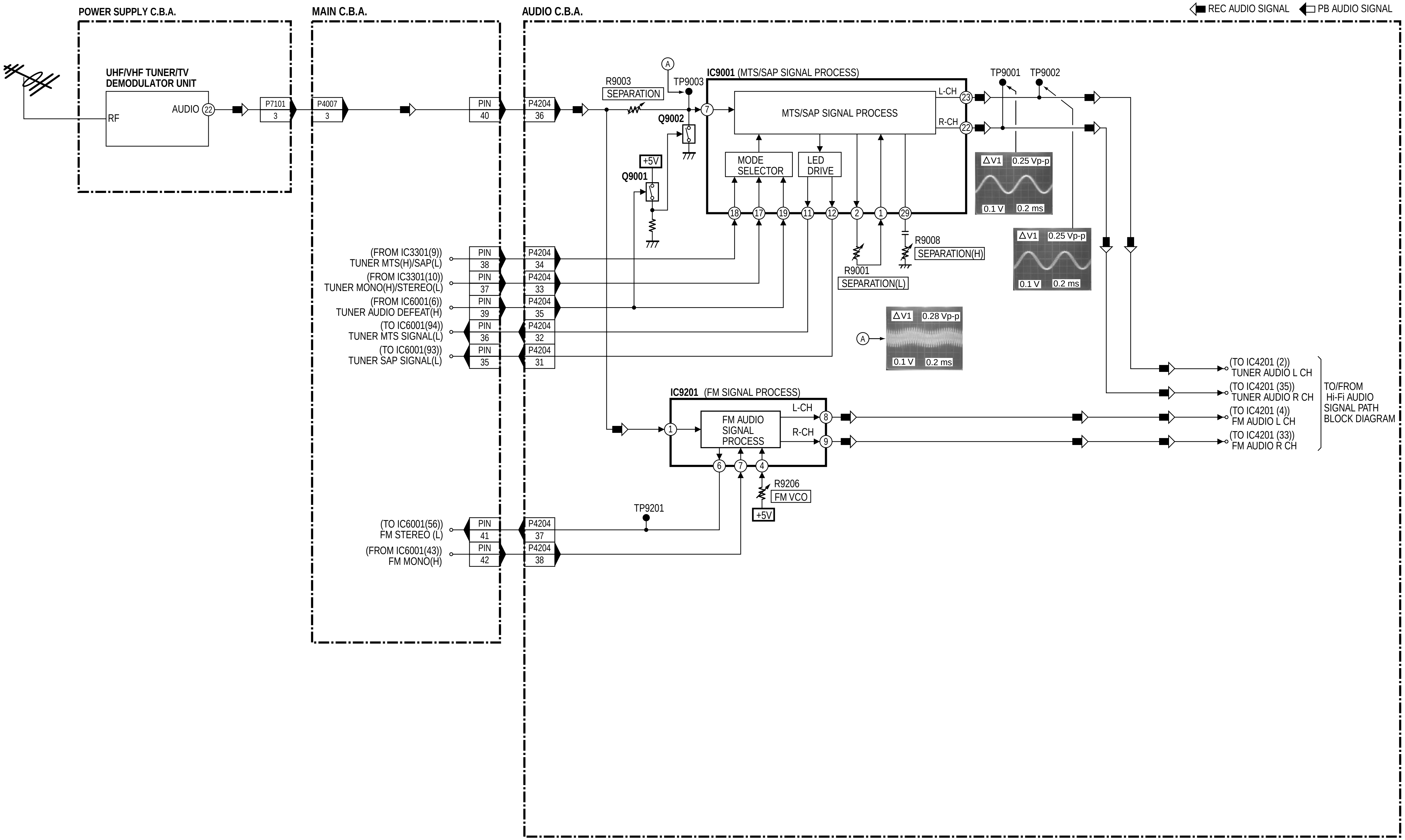

REC VIDEO SIGNAL
PB VIDEO SIGNAL
DVD DECODER C.B.A.
MAIN C.B.A.
FROM DVD BLOCK DIAGRAM
DVD VIDEO
DVD S-Y/Y
DVD S-C/PR
P8002
11
P8002
9
P8002
7
P4004
11
P4004
9
P4004
7
IC3302 (SW)
VV
DVD
IC5301 (SW)
S-LINE/DVD
TUNER
VV
Q5301
BUFFER
J3305
NOT USED
VIDEO
Q5104
BUFFER
LPF
Q5110
BUFFER
Q5118
CLAMP
Q5119
BUFFER
IC5361 (SW)
S-LINE1
S-LINE2
S-LINE
DVD
FROM VIDEO SIGNAL PATH BLOCK DIAGRAM
VIDEO
TUNER VIDEO
COMPONENT Y-1
COMPONENT Y-2
COMPONENT C-1
COMPONENT C-2
VV CHROMINANCE
IC5302 (SW)
S-LINE1
S-LINE2
S-LINE
VV
IC5101 (3 LINE DIGITAL COMB FILTER)
A/D
A/D
3 LINE COM FILTER
H-OUTLINE COMPENSATE /DELAY
DELAY
D/A
D/A
I²C CONTROL
FSC
Q5108
BUFFER
Q5151
CLAMP
Q5152
BUFFER
LUMINANCE
Q5105,Q5114
BUFFER
Q5101
BUFFER
CHROMINANCE
J5003
NOT USED
Q5109
TO/FROM TY Y/C PROCESS BLOCK DIAGRAM
Q5107
BUFFER
LPF
Q5125
BUFFER
Q5120, Q5121
AFC LEVEL CONTROL
3.58MHz
IC5351 (SW)
S-LINE/VV
DVD
MUTE
(FROM IC6001(53)) LINE1(L)/LINE2(H)
(FROM IC6001(59)) DVD(H)
(FROM IC6001(55)) VV(H)
(FROM IC6001(32)) COLOR MUTE(H)
(FROM IC6001(17)) I²C SERIAL DATA
(FROM IC6001(18)) I²C SERIAL CLOCK
(FROM IC6001(10)) TUNER&VV(H)/LINE&DVD(L)

PV-DF2002 VIDEO SELECTOR BLOCK DIAGRAM

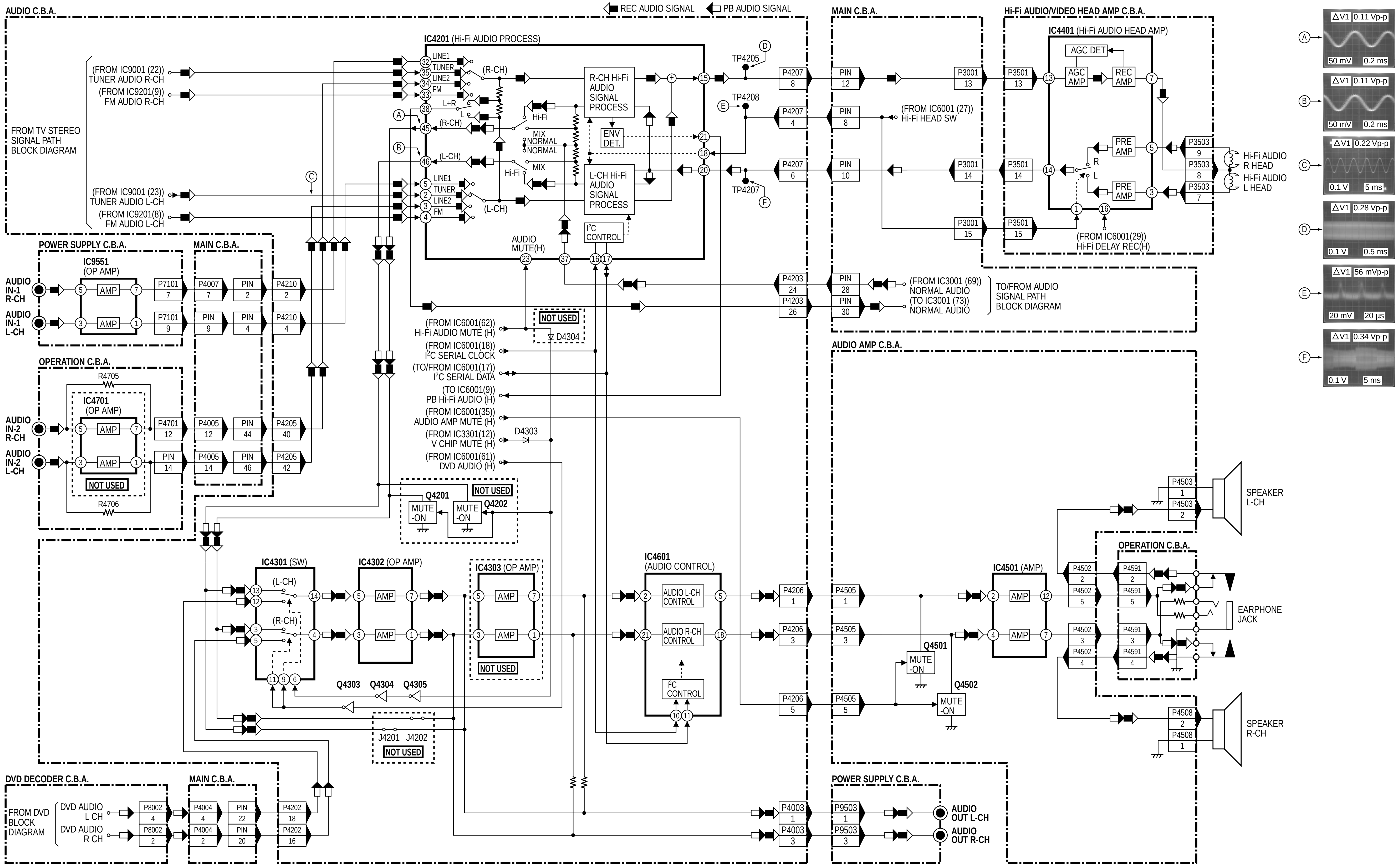
AUDIO SIGNAL PATH BLOCK DIAGRAM


MAIN C.B.A.
REC AUDIO SIGNAL
PB AUDIO SIGNAL
AUDIO C.B.A.
TO/FROM Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM
NORMAL AUDIO
NORMAL AUDIO
P4203
26
P4203
24
PIN
30
PIN
28
ΔV1 40 mVp-p
20 mV 0.5 ms
IC3001 (AUDIO PROCESS)
73
REC
PB
MUTE
AGC DET
AGC
REC-OFF
56
REC AMP
REC-ON
65
57
58
PB AMP
60
ΔV1 48 mVp-p
20 mV 0.5 ms
LINE AMP
I²C CONTROL
AUDIO MUTE(H)
69
75
7
8
ΔV1 0.7 Vp-p
0.5 V 0.5 ms
+5V
Q4001
Q4002
Q4003
BIAS OSC
T4101
Q4101
P4002
2
P4002
1
P4002
4
P4002
3
AUDIO CONTROL HEAD UNIT
P4092
2
P4092
1
P4092
4
P4092
3
AUDIO HEAD
AUDIO ERASE HEAD
ΔV1 0.26 Vp-p
0.2 V 0.5 ms
NOT USED
Q4173
(TO/FROM IC6001(17))
I²C SERIAL DATA
(FROM IC6001(18))
I²C SERIAL CLOCK
(FROM IC6001(7))
AUDIO MUTE(H)
FL4051
15.75kHz TRAP
(FROM IC6001(22))
BEEPER ON(H)
Q4171
(FROM IC6001(19))
BEEPER
FULL ERASE HEAD UNIT
P4001
1
P4001
2
PIN
1
PIN
2
FULL ERASE HEAD

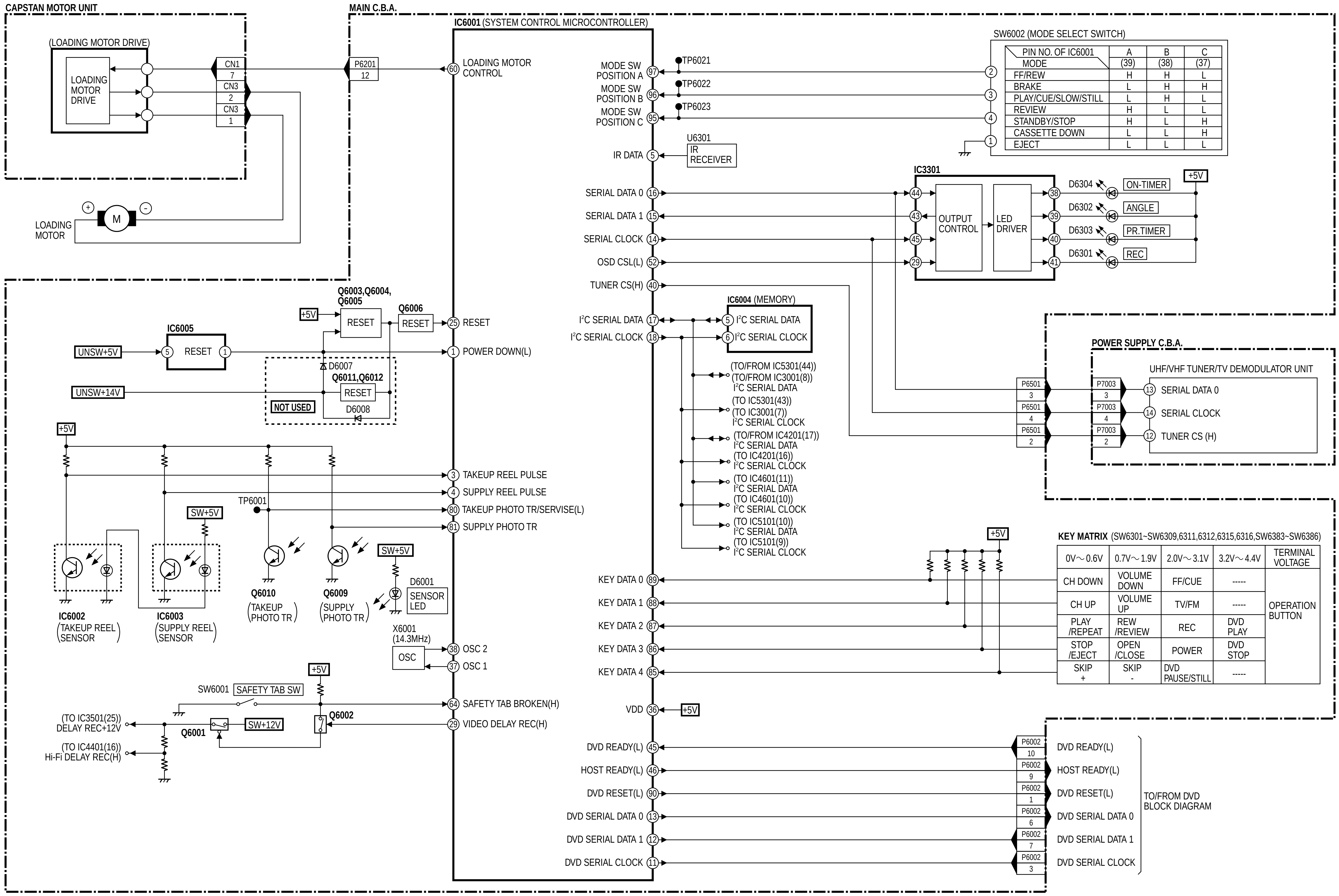
TV STEREO SIGNAL PATH BLOCK DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
POWER SUPPLY C.B.A.
MAIN C.B.A.
AUDIO C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT
RF
AUDIO
22
P7101
3
P4007
3
PIN
40
P4204
36
R9003
SEPARATION
A
TP9003
Q9002
+5V
Q9001
IC9001 (MTS/SAP SIGNAL PROCESS)
MTS/SAP SIGNAL PROCESS
L-CH
R-CH
23
22
7
MODE SELECTOR
LED DRIVE
18
17
19
11
12
2
1
29
R9008
SEPARATION(H)
R9001
SEPARATION(L)
TP9001
TP9002
ΔV1 0.25 Vp-p
0.1 V 0.2 ms
ΔV1 0.25 Vp-p
0.1 V 0.2 ms
ΔV1 0.28 Vp-p
0.1 V 0.2 ms
(FROM IC3301(9)) TUNER MTS(H)/SAP(L)
PIN 38
P4204 34
(FROM IC3301(10)) TUNER MONO(H)/STEREO(L)
PIN 37
P4204 33
(FROM IC6001(6)) TUNER AUDIO DEFEAT(H)
PIN 39
P4204 35
(TO IC6001(94)) TUNER MTS SIGNAL(L)
PIN 36
P4204 32
(TO IC6001(93)) TUNER SAP SIGNAL(L)
PIN 35
P4204 31
IC9201 (FM SIGNAL PROCESS)
FM AUDIO SIGNAL PROCESS
L-CH
R-CH
1
8
9
6
7
4
R9206
FM VCO
+5V
TP9201
(TO IC6001(56)) FM STEREO (L)
PIN 41
P4204 37
(FROM IC6001(43)) FM MONO(H)
PIN 42
P4204 38
(TO IC4201 (2)) TUNER AUDIO L CH
(TO IC4201 (35)) TUNER AUDIO R CH
(TO IC4201 (4)) FM AUDIO L CH
(TO IC4201 (33)) FM AUDIO R CH
TO/FROM Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM

Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM


REC AUDIO SIGNAL
PB AUDIO SIGNAL
AUDIO C.B.A.
IC4201 (Hi-Fi AUDIO PROCESS)
(FROM IC9001 (22)) TUNER AUDIO R-CH
(FROM IC9201(9)) FM AUDIO R-CH
FROM TV STEREO SIGNAL PATH BLOCK DIAGRAM
(FROM IC9001 (23)) TUNER AUDIO L-CH
(FROM IC9201(8)) FM AUDIO L-CH
LINE1
TUNER
LINE2
FM
L+R
L
(R-CH)
(L-CH)
R-CH Hi-Fi AUDIO SIGNAL PROCESS
L-CH Hi-Fi AUDIO SIGNAL PROCESS
ENV DET.
Hi-Fi
MIX
NORMAL
I²C CONTROL
AUDIO MUTE(H)
TP4205
TP4208
TP4207
MAIN C.B.A.
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.
IC4401 (Hi-Fi AUDIO HEAD AMP)
AGC DET
AGC AMP
REC AMP
PRE AMP
(FROM IC6001 (27)) Hi-Fi HEAD SW
(FROM IC6001(29)) Hi-Fi DELAY REC(H)
Hi-Fi AUDIO R HEAD
Hi-Fi AUDIO L HEAD
P4207
P3001
P3501
P3503
PIN
POWER SUPPLY C.B.A.
IC9551 (OP AMP)
AMP
AUDIO IN-1 R-CH
AUDIO IN-1 L-CH
P7101
P4007
P4210
OPERATION C.B.A.
IC4701 (OP AMP)
R4705
R4706
AUDIO IN-2 R-CH
AUDIO IN-2 L-CH
P4701
P4005
P4205
NOT USED
P4203
(FROM IC3001 (69)) NORMAL AUDIO
(TO IC3001 (73)) NORMAL AUDIO
TO/FROM AUDIO SIGNAL PATH BLOCK DIAGRAM
(FROM IC6001(62)) Hi-Fi AUDIO MUTE (H)
(FROM IC6001(18)) I²C SERIAL CLOCK
(TO/FROM IC6001(17)) I²C SERIAL DATA
(TO IC6001(9)) PB Hi-Fi AUDIO (H)
(FROM IC6001(35)) AUDIO AMP MUTE (H)
(FROM IC3301(12)) V CHIP MUTE (H)
(FROM IC6001(61)) DVD AUDIO (H)
D4304
D4303
Q4201
Q4202
MUTE -ON
AUDIO AMP C.B.A.
IC4301 (SW)
IC4302 (OP AMP)
IC4303 (OP AMP)
IC4601 (AUDIO CONTROL)
AUDIO L-CH CONTROL
AUDIO R-CH CONTROL
Q4303
Q4304
Q4305
J4201
J4202
P4206
P4505
Q4501
Q4502
IC4501 (AMP)
P4502
P4591
P4503
P4508
SPEAKER L-CH
SPEAKER R-CH
EARPHONE JACK
DVD DECODER C.B.A.
FROM DVD BLOCK DIAGRAM
DVD AUDIO L CH
DVD AUDIO R CH
P8002
P4004
P4202
P4003
P9503
AUDIO OUT L-CH
AUDIO OUT R-CH
A ΔV1 0.11 Vp-p 50 mV 0.2 ms
B ΔV1 0.11 Vp-p 50 mV 0.2 ms
C ΔV1 0.22 Vp-p 0.1 V 5 ms
D ΔV1 0.28 Vp-p 0.1 V 0.5 ms
E ΔV1 56 mVp-p 20 mV 20 µs
F ΔV1 0.34 Vp-p 0.1 V 5 ms

SYSTEM CONTROL BLOCK DIAGRAM


CAPSTAN MOTOR UNIT
(LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
CN1
7
CN3
2
CN3
1
LOADING MOTOR
M
+
-
MAIN C.B.A.
P6201
12
IC6001 (SYSTEM CONTROL MICROCONTROLLER)
60 LOADING MOTOR CONTROL
MODE SW POSITION A 97
MODE SW POSITION B 96
MODE SW POSITION C 95
TP6021
TP6022
TP6023
IR DATA 5
U6301
IR RECEIVER
SERIAL DATA 0 16
SERIAL DATA 1 15
SERIAL CLOCK 14
OSD CSL(L) 52
TUNER CS(H) 40
I²C SERIAL DATA 17
I²C SERIAL CLOCK 18
IC3301
44
43
45
29
OUTPUT CONTROL
LED DRIVER
38
39
40
41
D6304
ON-TIMER
D6302
ANGLE
D6303
PR.TIMER
D6301
REC
+5V
IC6004 (MEMORY)
5 I²C SERIAL DATA
6 I²C SERIAL CLOCK
(TO/FROM IC5301(44))
(TO/FROM IC3001(8))
I²C SERIAL DATA
(TO IC5301(43))
(TO IC3001(7))
I²C SERIAL CLOCK
(TO/FROM IC4201(17))
I²C SERIAL DATA
(TO IC4201(16))
I²C SERIAL CLOCK
(TO IC4601(11))
I²C SERIAL DATA
(TO IC4601(10))
I²C SERIAL CLOCK
(TO IC5101(10))
I²C SERIAL DATA
(TO IC5101(9))
I²C SERIAL CLOCK
POWER SUPPLY C.B.A.
UHF/VHF TUNER/TV DEMODULATOR UNIT
P6501
3
P6501
4
P6501
2
P7003
3
P7003
4
P7003
2
13 SERIAL DATA 0
14 SERIAL CLOCK
12 TUNER CS (H)
Q6003,Q6004, Q6005
+5V
RESET
Q6006
RESET
25 RESET
IC6005
UNSW+5V
5
RESET
1
1 POWER DOWN(L)
D6007
Q6011,Q6012
RESET
UNSW+14V
NOT USED
D6008
+5V
3 TAKEUP REEL PULSE
4 SUPPLY REEL PULSE
TP6001
80 TAKEUP PHOTO TR/SERVISE(L)
81 SUPPLY PHOTO TR
SW+5V
SW+5V
IC6002
(TAKEUP REEL SENSOR)
IC6003
(SUPPLY REEL SENSOR)
Q6010
(TAKEUP PHOTO TR)
Q6009
(SUPPLY PHOTO TR)
D6001
SENSOR LED
X6001
(14.3MHz)
OSC
38 OSC 2
37 OSC 1
+5V
SW6001
SAFETY TAB SW
64 SAFETY TAB BROKEN(H)
29 VIDEO DELAY REC(H)
Q6002
SW+12V
Q6001
(TO IC3501(25))
DELAY REC+12V
(TO IC4401(16))
Hi-Fi DELAY REC(H)
KEY DATA 0 89
KEY DATA 1 88
KEY DATA 2 87
KEY DATA 3 86
KEY DATA 4 85
+5V
VDD 36
+5V
DVD READY(L) 45
HOST READY(L) 46
DVD RESET(L) 90
DVD SERIAL DATA 0 13
DVD SERIAL DATA 1 12
DVD SERIAL CLOCK 11
P6002
10
P6002
9
P6002
1
P6002
6
P6002
7
P6002
3
DVD READY(L)
HOST READY(L)
DVD RESET(L)
DVD SERIAL DATA 0
DVD SERIAL DATA 1
DVD SERIAL CLOCK
TO/FROM DVD BLOCK DIAGRAM
2
3
4
1

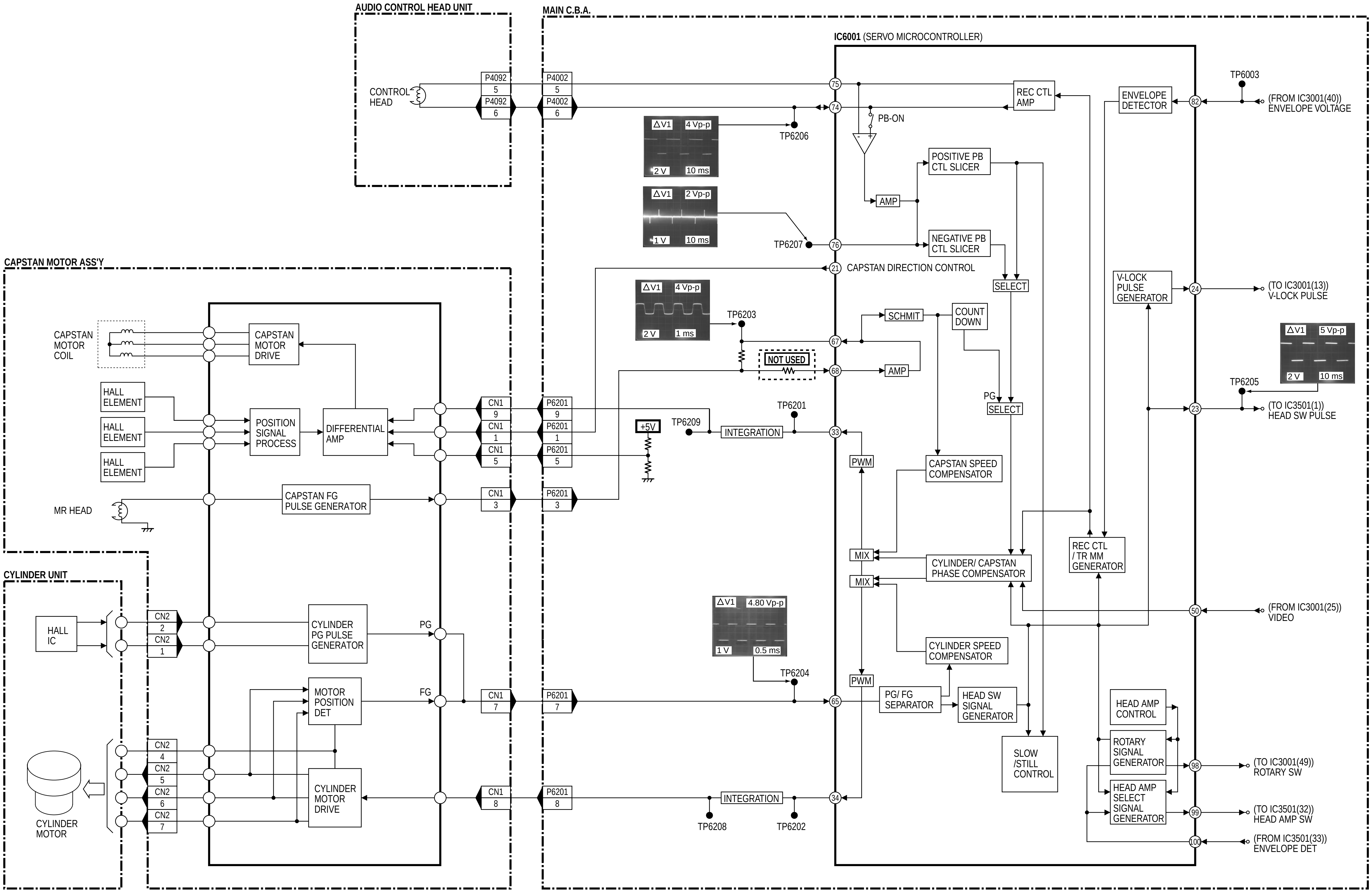
SW6002 (MODE SELECT SWITCH)

PIN NO. OF IC6001 / MODE	A (39)	B (38)	C (37)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

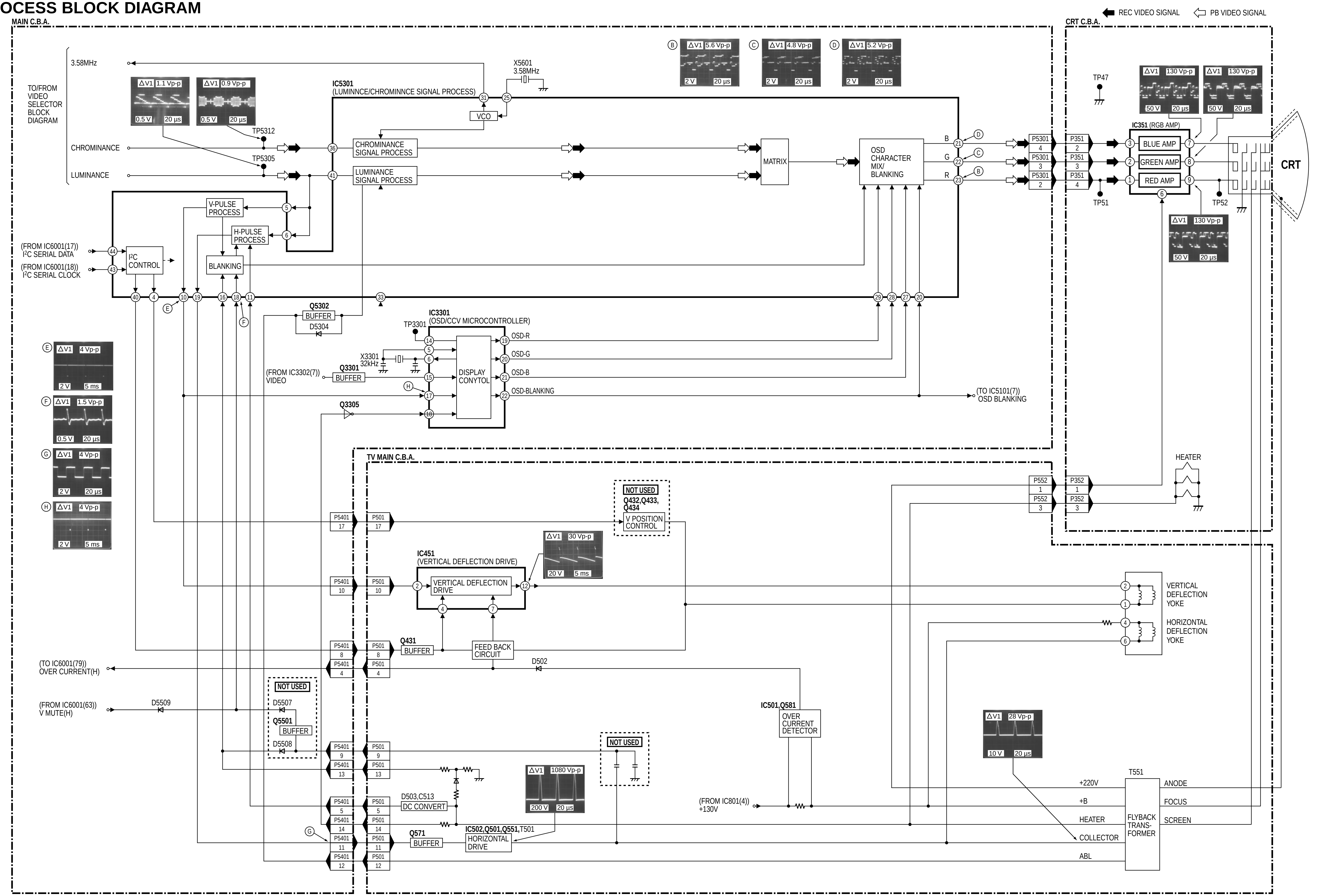
KEY MATRIX (SW6301~SW6309,6311,6312,6315,6316,SW6383~SW6386)

0V～0.6V	0.7V～1.9V	2.0V～3.1V	3.2V～4.4V	TERMINAL VOLTAGE
CH DOWN	VOLUME DOWN	FF/CUE	-----	OPERATION BUTTON
CH UP	VOLUME UP	TV/FM	-----	
PLAY /REPEAT	REW /REVIEW	REC	DVD PLAY	
STOP /EJECT	OPEN /CLOSE	POWER	DVD STOP	
SKIP +	SKIP -	DVD PAUSE/STILL	-----	

SERVO BLOCK DIAGRAM

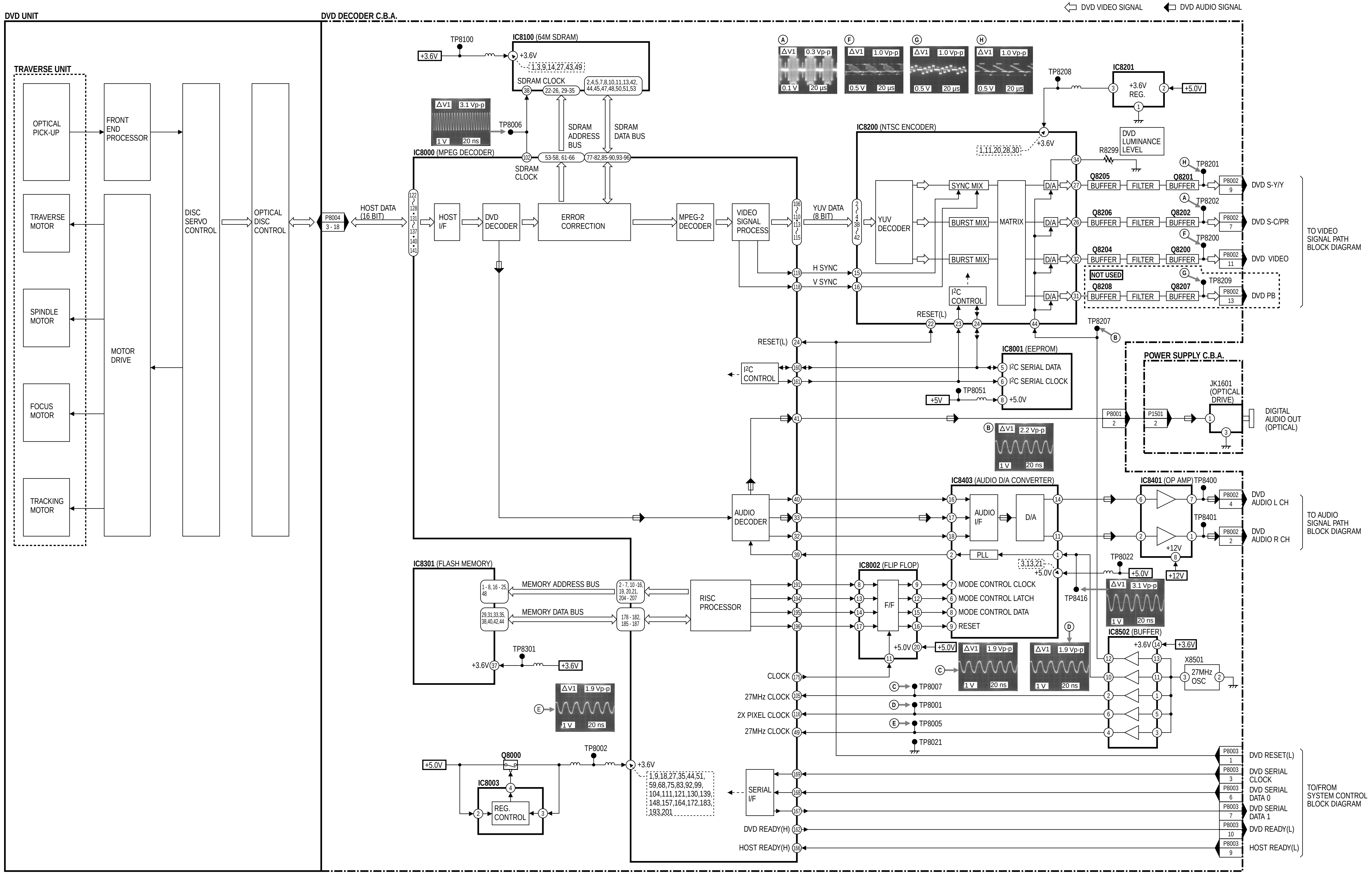

AUDIO CONTROL HEAD UNIT
MAIN C.B.A.
IC6001 (SERVO MICROCONTROLLER)
CONTROL HEAD
P4092
5
P4092
6
P4002
5
P4002
6
ΔV1 4 Vp-p
2 V 10 ms
TP6206
ΔV1 2 Vp-p
1 V 10 ms
TP6207
75
74
76
21
PB-ON
REC CTL AMP
AMP
POSITIVE PB CTL SLICER
NEGATIVE PB CTL SLICER
ENVELOPE DETECTOR
TP6003
82
(FROM IC3001(40)) ENVELOPE VOLTAGE
CAPSTAN DIRECTION CONTROL
SELECT
V-LOCK PULSE GENERATOR
24
(TO IC3001(13)) V-LOCK PULSE
CAPSTAN MOTOR ASS'Y
CAPSTAN MOTOR COIL
CAPSTAN MOTOR DRIVE
ΔV1 4 Vp-p
2 V 1 ms
TP6203
SCHMIT
COUNT DOWN
67
NOT USED
68
AMP
ΔV1 5 Vp-p
2 V 10 ms
TP6205
PG
SELECT
23
(TO IC3501(1)) HEAD SW PULSE
HALL ELEMENT
HALL ELEMENT
HALL ELEMENT
POSITION SIGNAL PROCESS
DIFFERENTIAL AMP
CN1
9
CN1
1
CN1
5
P6201
9
P6201
1
P6201
5
+5V
TP6209
TP6201
INTEGRATION
33
PWM
CAPSTAN SPEED COMPENSATOR
MR HEAD
CAPSTAN FG PULSE GENERATOR
CN1
3
P6201
3
REC CTL / TR MM GENERATOR
MIX
MIX
CYLINDER/ CAPSTAN PHASE COMPENSATOR
CYLINDER UNIT
HALL IC
CN2
2
CN2
1
CYLINDER PG PULSE GENERATOR
PG
ΔV1 4.80 Vp-p
1 V 0.5 ms
50
(FROM IC3001(25)) VIDEO
CYLINDER SPEED COMPENSATOR
TP6204
PWM
MOTOR POSITION DET
FG
CN1
7
P6201
7
65
PG/ FG SEPARATOR
HEAD SW SIGNAL GENERATOR
HEAD AMP CONTROL
SLOW /STILL CONTROL
ROTARY SIGNAL GENERATOR
98
(TO IC3001(49)) ROTARY SW
CN2
4
CN2
5
CN2
6
CN2
7
CYLINDER MOTOR
CYLINDER MOTOR DRIVE
CN1
8
P6201
8
INTEGRATION
34
TP6208
TP6202
HEAD AMP SELECT SIGNAL GENERATOR
99
(TO IC3501(32)) HEAD AMP SW
100
(FROM IC3501(33)) ENVELOPE DET

TV Y/C PROCESS BLOCK DIAGRAM



REC VIDEO SIGNAL
PB VIDEO SIGNAL
MAIN C.B.A.
CRT C.B.A.
TV MAIN C.B.A.
TO/FROM VIDEO SELECTOR BLOCK DIAGRAM
3.58MHz
CHROMINANCE
LUMINANCE
TP5312
TP5305
ΔV1 1.1 Vp-p 0.5 V 20 µs
ΔV1 0.9 Vp-p 0.5 V 20 µs
X5601 3.58MHz
IC5301 (LUMINNCE/CHROMINNCE SIGNAL PROCESS)
VCO
CHROMINANCE SIGNAL PROCESS
LUMINANCE SIGNAL PROCESS
MATRIX
OSD CHARACTER MIX/ BLANKING
V-PULSE PROCESS
H-PULSE PROCESS
BLANKING
I²C CONTROL
(FROM IC6001(17)) I²C SERIAL DATA
(FROM IC6001(18)) I²C SERIAL CLOCK
B ΔV1 5.6 Vp-p 2 V 20 µs
C ΔV1 4.8 Vp-p 2 V 20 µs
D ΔV1 5.2 Vp-p 2 V 20 µs
B G R
P5301 P351
TP47
IC351 (RGB AMP)
BLUE AMP
GREEN AMP
RED AMP
ΔV1 130 Vp-p 50 V 20 µs
TP51
TP52
CRT
Q5302 BUFFER
D5304
IC3301 (OSD/CCV MICROCONTROLLER)
TP3301
X3301 32kHz
DISPLAY CONYTOL
OSD-R
OSD-G
OSD-B
OSD-BLANKING
(TO IC5101(7)) OSD BLANKING
(FROM IC3302(7)) VIDEO
Q3301 BUFFER
Q3305
E ΔV1 4 Vp-p 2 V 5 ms
F ΔV1 1.5 Vp-p 0.5 V 20 µs
G ΔV1 4 Vp-p 2 V 20 µs
H ΔV1 4 Vp-p 2 V 5 ms
HEATER
P552 P352
NOT USED
Q432,Q433, Q434
V POSITION CONTROL
P5401 P501
IC451 (VERTICAL DEFLECTION DRIVE)
VERTICAL DEFLECTION DRIVE
ΔV1 30 Vp-p 20 V 5 ms
Q431 BUFFER
FEED BACK CIRCUIT
VERTICAL DEFLECTION YOKE
HORIZONTAL DEFLECTION YOKE
(TO IC6001(79)) OVER CURRENT(H)
D502
(FROM IC6001(63)) V MUTE(H)
D5509
D5507
Q5501 BUFFER
D5508
IC501,Q581
OVER CURRENT DETECTOR
ΔV1 28 Vp-p 10 V 20 µs
D503,C513 DC CONVERT
ΔV1 1080 Vp-p 200 V 20 µs
Q571 BUFFER
IC502,Q501,Q551,T501
HORIZONTAL DRIVE
(FROM IC801(4)) +130V
T551
+220V
+B
HEATER
COLLECTOR
ABL
FLYBACK TRANS- FORMER
ANODE
FOCUS
SCREEN

DVD BLOCK DIAGRAM

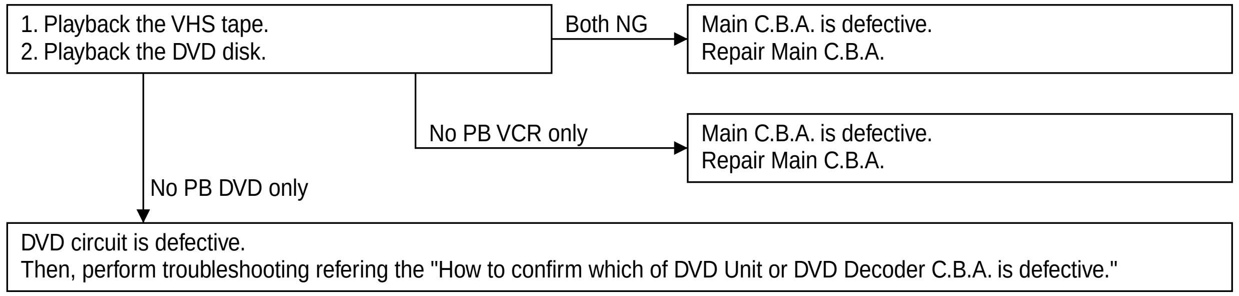

DVD VIDEO SIGNAL
DVD AUDIO SIGNAL
DVD UNIT
DVD DECODER C.B.A.
TRAVERSE UNIT
OPTICAL PICK-UP
FRONT END PROCESSOR
DISC SERVO CONTROL
OPTICAL DISC CONTROL
TRAVERSE MOTOR
SPINDLE MOTOR
MOTOR DRIVE
FOCUS MOTOR
TRACKING MOTOR
P8004 3 - 18
HOST DATA (16 BIT)
TP8100
+3.6V
IC8100 (64M SDRAM)
1,3,9,14,27,43,49
SDRAM CLOCK
22-26, 29-35
2,4,5,7,8,10,11,13,42, 44,45,47,48,50,51,53
SDRAM ADDRESS BUS
SDRAM DATA BUS
TP8006
ΔV1 3.1 Vp-p 1 V 20 ns
IC8000 (MPEG DECODER)
53-58, 61-66
77-82,85-90,93-96
HOST I/F
DVD DECODER
ERROR CORRECTION
MPEG-2 DECODER
VIDEO SIGNAL PROCESS
YUV DATA (8 BIT)
H SYNC
V SYNC
A ΔV1 0.3 Vp-p 0.1 V 20 μs
F ΔV1 1.0 Vp-p 0.5 V 20 μs
G ΔV1 1.0 Vp-p 0.5 V 20 μs
H ΔV1 1.0 Vp-p 0.5 V 20 μs
TP8208
IC8201
+3.6V REG.
+5.0V
IC8200 (NTSC ENCODER)
1,11,20,28,30
DVD LUMINANCE LEVEL
R8299
YUV DECODER
SYNC MIX
BURST MIX
MATRIX
D/A
I²C CONTROL
RESET(L)
Q8205 BUFFER FILTER Q8201 BUFFER
Q8206 BUFFER FILTER Q8202 BUFFER
Q8204 BUFFER FILTER Q8200 BUFFER
NOT USED
Q8208 BUFFER FILTER Q8207 BUFFER
TP8201
TP8202
TP8200
TP8209
P8002 9
P8002 7
P8002 11
P8002 13
DVD S-Y/Y
DVD S-C/PR
DVD VIDEO
DVD PB
TO VIDEO SIGNAL PATH BLOCK DIAGRAM
TP8207
IC8001 (EEPROM)
I²C SERIAL DATA
I²C SERIAL CLOCK
+5.0V
TP8051
+5V
I²C CONTROL
POWER SUPPLY C.B.A.
P8001 2
P1501 2
JK1601 (OPTICAL DRIVE)
DIGITAL AUDIO OUT (OPTICAL)
B ΔV1 2.2 Vp-p 1 V 20 ns
AUDIO DECODER
IC8403 (AUDIO D/A CONVERTER)
AUDIO I/F
D/A
PLL
IC8401 (OP AMP)
TP8400
TP8401
+12V
P8002 4
P8002 2
DVD AUDIO L CH
DVD AUDIO R CH
TO AUDIO SIGNAL PATH BLOCK DIAGRAM
TP8022
3,13,21
+5.0V
+12V
IC8301 (FLASH MEMORY)
1 - 8, 16 - 25, 48
29,31,33,35, 38,40,42,44
MEMORY ADDRESS BUS
MEMORY DATA BUS
2 - 7, 10 -16, 19, 20,21, 204 - 207
178 - 182, 185 - 187
RISC PROCESSOR
IC8002 (FLIP FLOP)
F/F
MODE CONTROL CLOCK
MODE CONTROL LATCH
MODE CONTROL DATA
RESET
TP8416
ΔV1 3.1 Vp-p 1 V 20 ns
TP8301
+3.6V
C ΔV1 1.9 Vp-p 1 V 20 ns
D ΔV1 1.9 Vp-p 1 V 20 ns
IC8502 (BUFFER)
X8501 27MHz OSC
CLOCK
27MHz CLOCK
2X PIXEL CLOCK
27MHz CLOCK
TP8007
TP8001
TP8005
TP8021
E ΔV1 1.9 Vp-p 1 V 20 ns
TP8002
Q8000
IC8003
REG. CONTROL
1,9,18,27,35,44,51, 59,68,75,83,92,99, 104,111,121,130,139, 148,157,164,172,183, 193,201
SERIAL I/F
DVD READY(H)
HOST READY(H)
P8003 1 DVD RESET(L)
P8003 3 DVD SERIAL CLOCK
P8003 6 DVD SERIAL DATA 0
P8003 7 DVD SERIAL DATA 1
P8003 10 DVD READY(L)
P8003 9 HOST READY(L)
TO/FROM SYSTEM CONTROL BLOCK DIAGRAM

PV-DF2002 DVD BLOCK DIAGRAM

Troubleshooting Hints

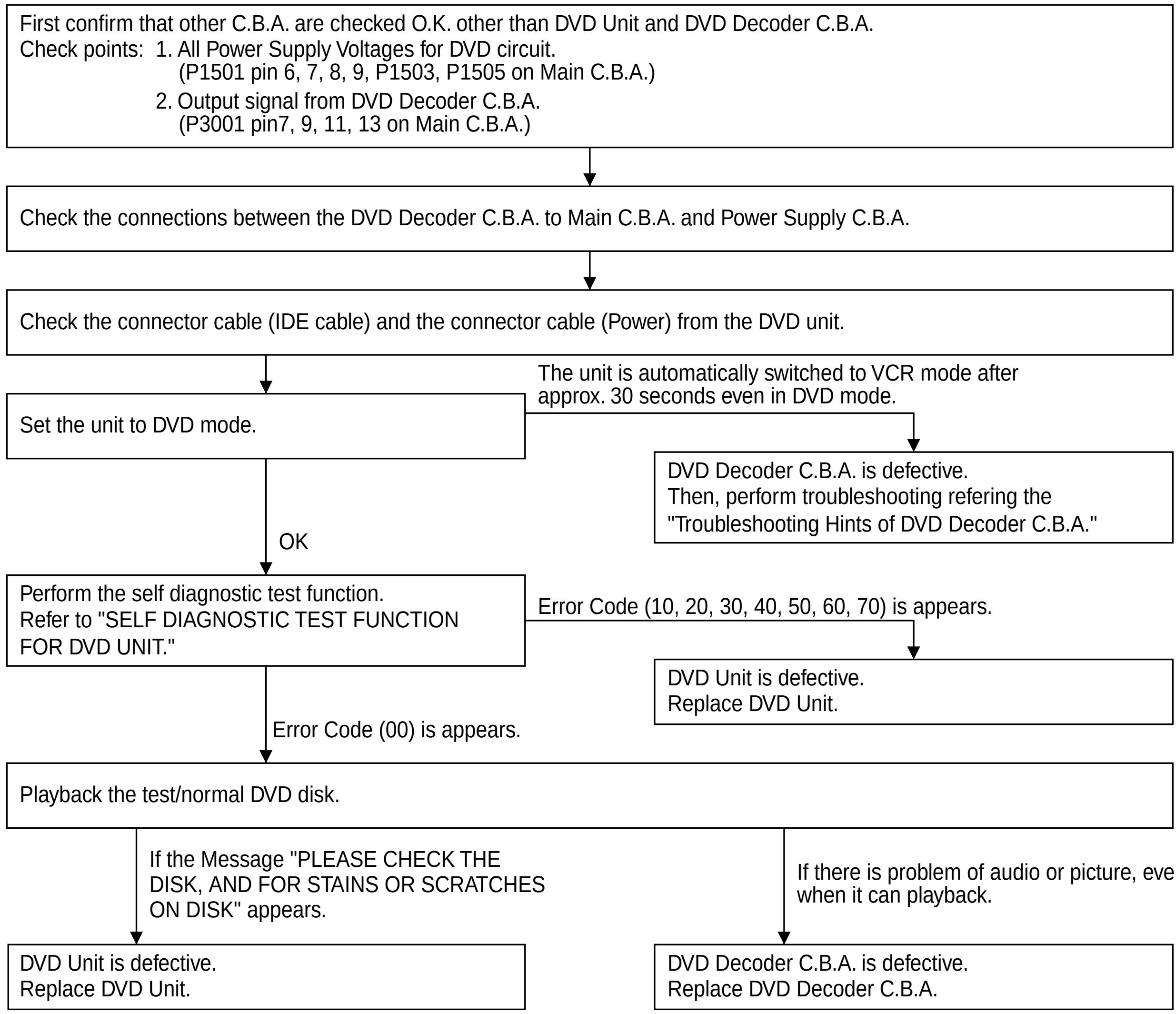
How to confirm which of DVD circuit or other circuits is defective.

1) Confirm DVD operation and VCR operation


1. Playback the VHS tape.
2. Playback the DVD disk.
Both NG
Main C.B.A. is defective.
Repair Main C.B.A.
No PB VCR only
Main C.B.A. is defective.
Repair Main C.B.A.
No PB DVD only
DVD circuit is defective.
Then, perform troubleshooting refering the "How to confirm which of DVD Unit or DVD Decoder C.B.A. is defective."

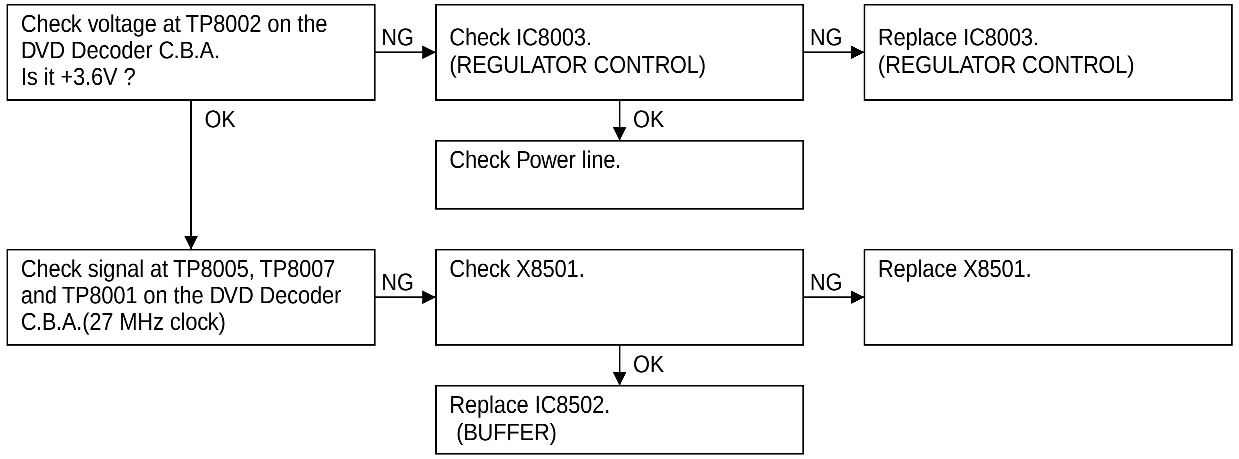
How to confirm which of DVD Unit or DVD Decoder C.B.A. is defective.

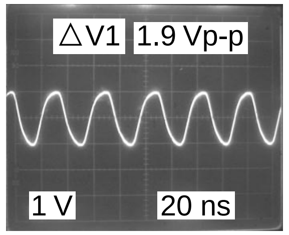
NOTE:
Host communication may not be done correctly between IC6001 on the Main C.B.A. and IC8000 on the DVD Decoder C.B.A. when there is a problem on the DVD Decoder C.B.A.
In that case, the unit is automatically switched to VCR mode after approx. 30 seconds even in DVD mode becouse the DVD Decoder C.B.A. is shut down. (Check the VCR mode indicator and DVD mode indicator on the Multi Function Display.)
Check the voltage during 30 seconds which the unit can be remained in DVD mode.


First confirm that other C.B.A. are checked O.K. other than DVD Unit and DVD Decoder C.B.A.
Check points: 1. All Power Supply Voltages for DVD circuit.
(P1501 pin 6, 7, 8, 9, P1503, P1505 on Main C.B.A.)
2. Output signal from DVD Decoder C.B.A.
(P3001 pin7, 9, 11, 13 on Main C.B.A.)
Check the connections between the DVD Decoder C.B.A. to Main C.B.A. and Power Supply C.B.A.
Check the connector cable (IDE cable) and the connector cable (Power) from the DVD unit.
Set the unit to DVD mode.
The unit is automatically switched to VCR mode after approx. 30 seconds even in DVD mode.
DVD Decoder C.B.A. is defective.
Then, perform troubleshooting refering the "Troubleshooting Hints of DVD Decoder C.B.A."
OK
Perform the self diagnostic test function.
Refer to "SELF DIAGNOSTIC TEST FUNCTION FOR DVD UNIT."
Error Code (10, 20, 30, 40, 50, 60, 70) is appears.
DVD Unit is defective.
Replace DVD Unit.
Error Code (00) is appears.
Playback the test/normal DVD disk.
If the Message "PLEASE CHECK THE DISK, AND FOR STAINS OR SCRATCHES ON DISK" appears.
If there is problem of audio or picture, even when it can playback.
DVD Unit is defective.
Replace DVD Unit.
DVD Decoder C.B.A. is defective.
Replace DVD Decoder C.B.A.

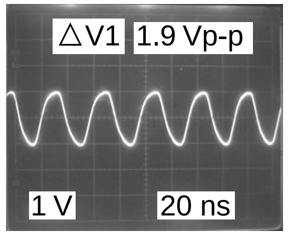
Troubleshooting Hints of DVD Decoder C.B.A.

Cause: Decoder Problem

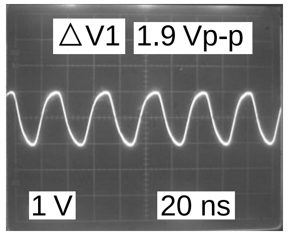

Check voltage at TP8002 on the DVD Decoder C.B.A.
Is it +3.6V ?
NG
Check IC8003.
(REGULATOR CONTROL)
NG
Replace IC8003.
(REGULATOR CONTROL)
OK
Check Power line.
OK
Check signal at TP8005, TP8007 and TP8001 on the DVD Decoder C.B.A.(27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8502.
(BUFFER)



TP8005

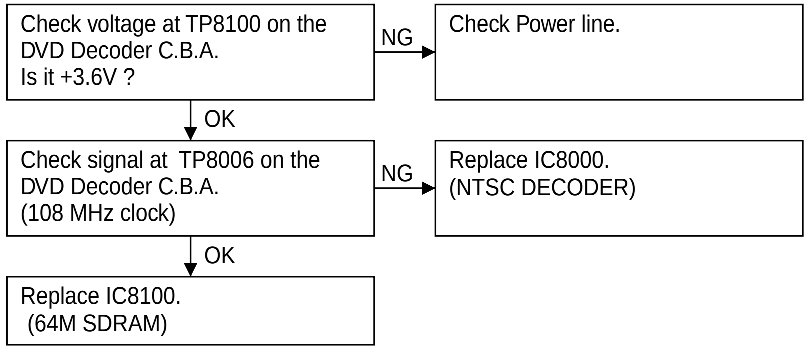


TP8007

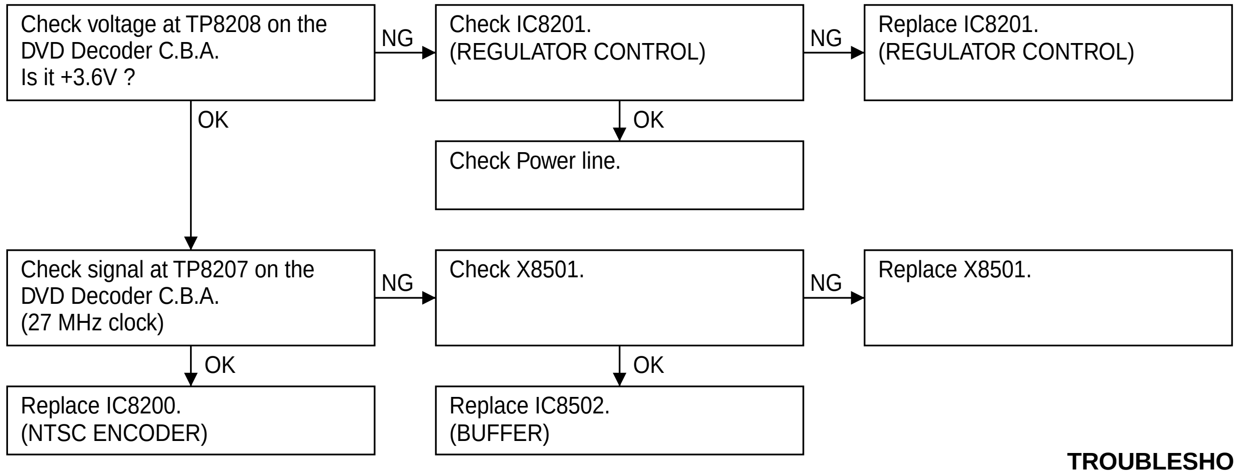


TP8001

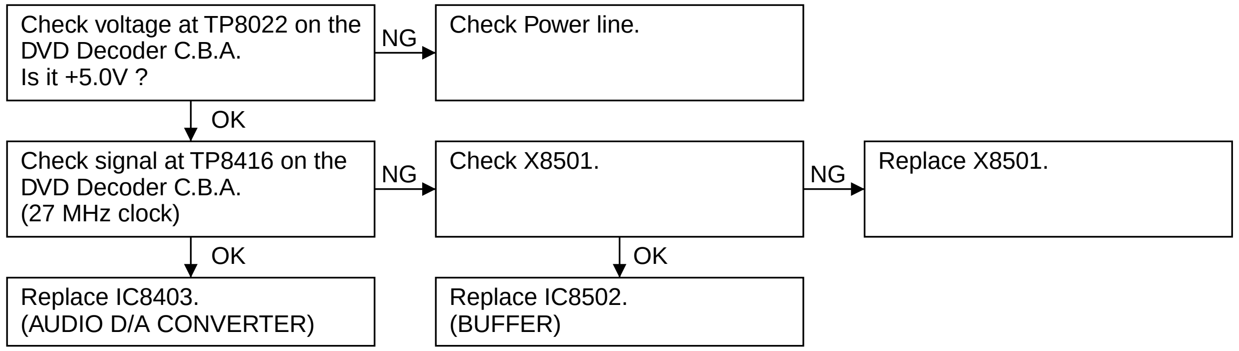
Cause: SDRAM Problem

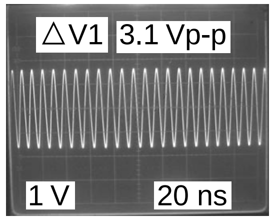

Check voltage at TP8100 on the DVD Decoder C.B.A.
Is it +3.6V ?
NG
Check Power line.
OK
Check signal at TP8006 on the DVD Decoder C.B.A.
(108 MHz clock)
NG
Replace IC8000.
(NTSC DECODER)
OK
Replace IC8100.
(64M SDRAM)

Cause: NTSC Encoder Problem

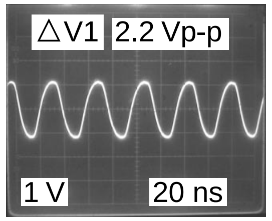

Check voltage at TP8208 on the DVD Decoder C.B.A.
Is it +3.6V ?
NG
Check IC8201.
(REGULATOR CONTROL)
NG
Replace IC8201.
(REGULATOR CONTROL)
OK
OK
Check Power line.
Check signal at TP8207 on the DVD Decoder C.B.A.
(27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8200.
(NTSC ENCODER)
OK
Replace IC8502.
(BUFFER)

Cause: Audio DAC Problem

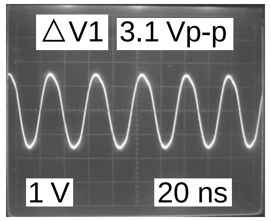

Check voltage at TP8022 on the DVD Decoder C.B.A. Is it +5.0V ?
NG
Check Power line.
OK
Check signal at TP8416 on the DVD Decoder C.B.A. (27 MHz clock)
NG
Check X8501.
NG
Replace X8501.
OK
Replace IC8403. (AUDIO D/A CONVERTER)
OK
Replace IC8502. (BUFFER)



TP8006

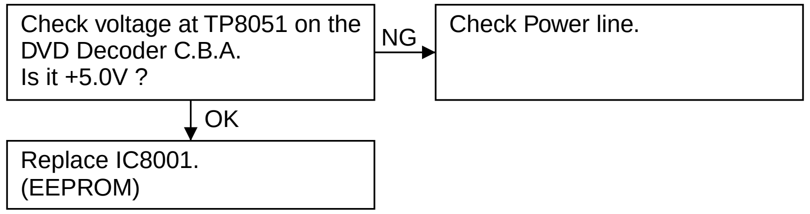


TP8207

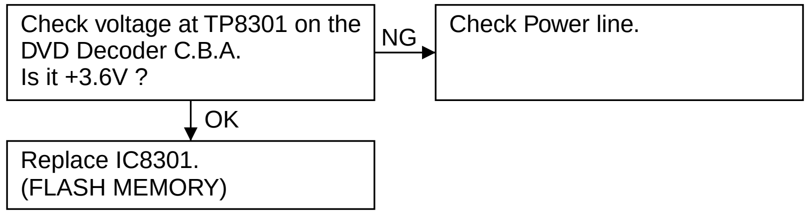


TP8416

Cause: EEPROM Problem


Check voltage at TP8051 on the DVD Decoder C.B.A. Is it +5.0V ?
NG
Check Power line.
OK
Replace IC8001. (EEPROM)

Cause: Flash ROM Problem

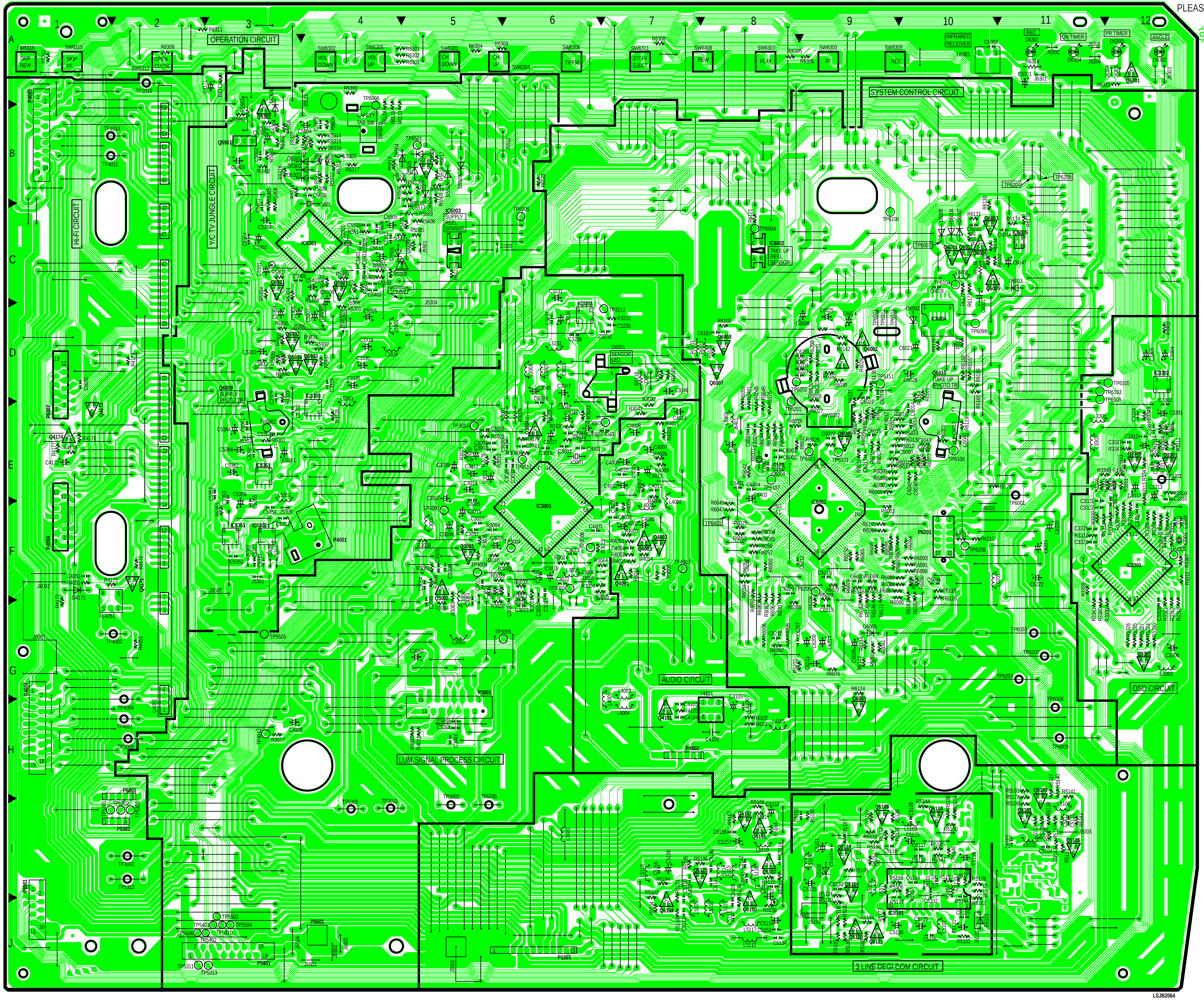

Check voltage at TP8301 on the DVD Decoder C.B.A. Is it +3.6V ?
NG
Check Power line.
OK
Replace IC8301. (FLASH MEMORY)

MAIN C.B.A. LSEP2064A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

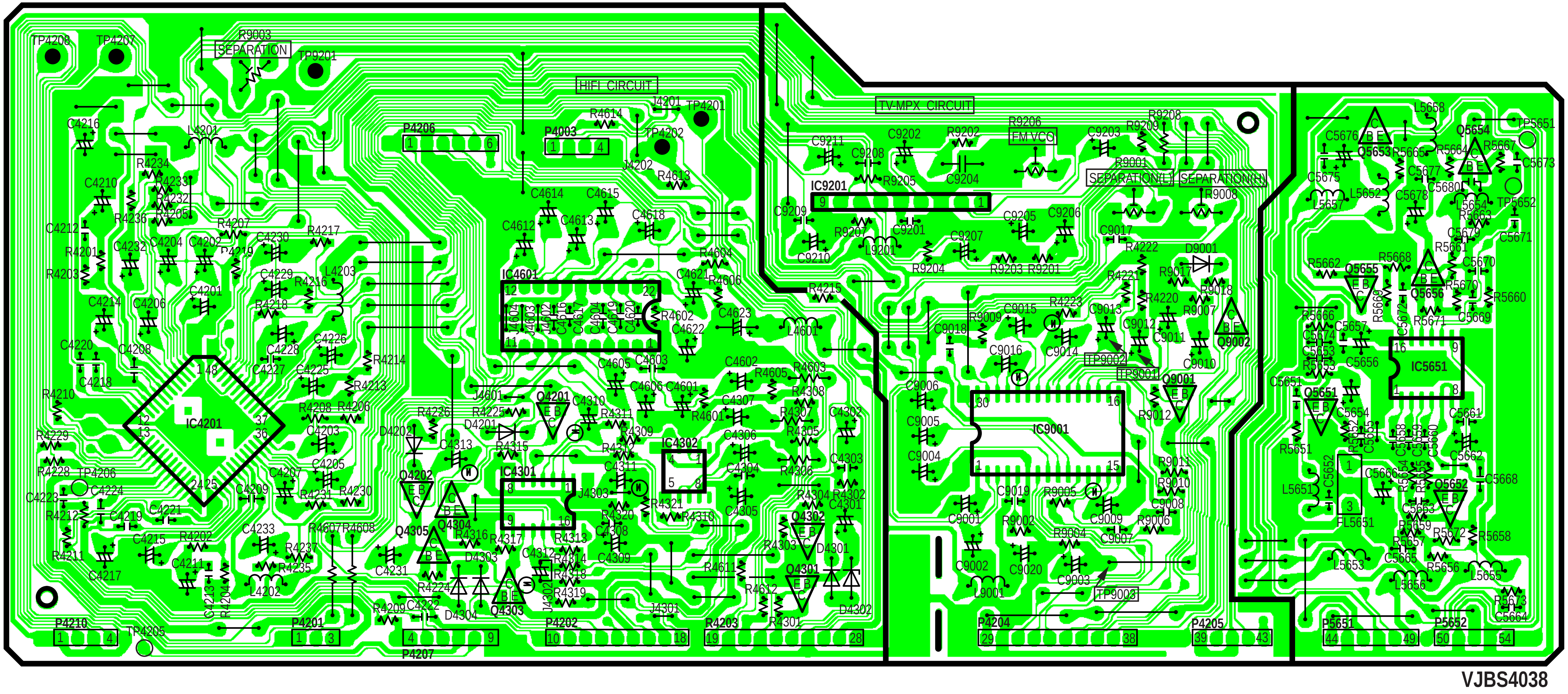

OPERATION CIRCUIT
SYSTEM CONTROL CIRCUIT
Hi-Fi CIRCUIT
Y/C TV JUNGLE CIRCUIT
AUDIO CIRCUIT
OSD CIRCUIT
LUM SIGNAL PROCESS CIRCUIT
3 LINE DEGI COM CIRCUIT
IC5301
IC3001
IC6001
IC3301
LSJB2064

MAIN C.B.A. LSEP2064A
PV-DF2002

AUDIO C.B.A. VEPS4038B

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



SEPARATION
R9003
TP9201
TP4208
TP4207
HIFI CIRCUIT
TV-MPX CIRCUIT
FM VCO
SEPARATION(L)
SEPARATION(H)
IC4201
IC4601
IC4301
IC4302
IC9201
IC9001
IC5651
P4210
P4201
P4207
P4202
P4203
P4204
P4205
P5651
P5652
P4206
P4003
TP9002
TP9001
TP9003
Q4201
Q4202
Q4303
Q4304
Q4305
Q4301
Q4302
Q9001
Q9002
Q5651
Q5652
Q5653
Q5654
Q5655
Q5656
FL5651
VJBS4038

TV MAIN C.B.A. LSEP2065A

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

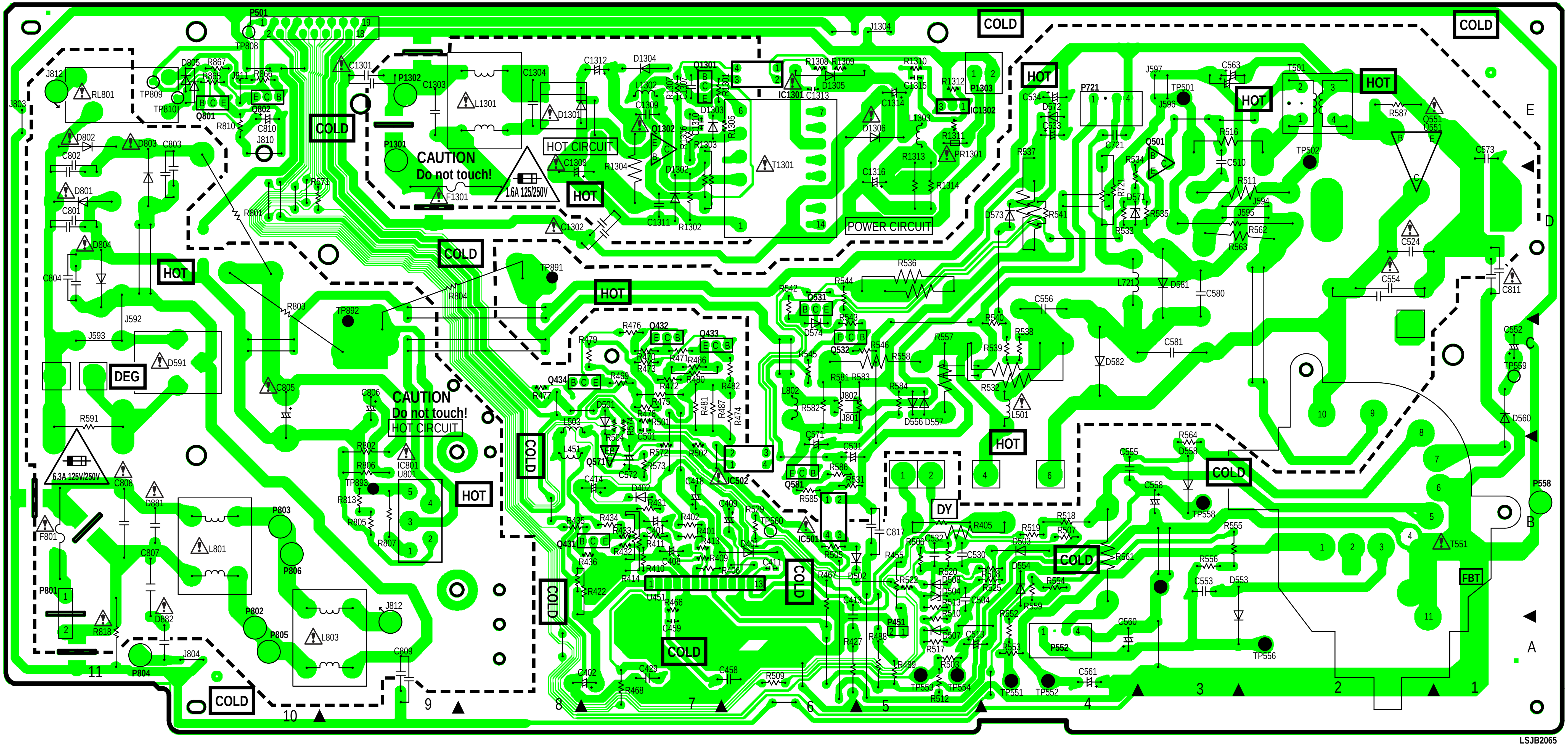
⚠ 1.6A 125/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V

⚠ 6.3A 125V/250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 6.3A 125V/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 6.3A 125V/250V

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.


P501
COLD
HOT
CAUTION
Do not touch!
HOT CIRCUIT
1.6A 125/250V
POWER CIRCUIT
DEG
6.3A 125V/250V
DY
FBT
T501
T551
T1301
IC501
IC502
IC801
IC1301
IC1302
U451
U801
F801
F1301
RL801
L801
L803
L1301
P801
P802
P803
P804
P805
P806
P552
P558
P721
P1301
P1302
P1303
J1304
TP808
TP891
TP892
TP893
TP501
TP502
TP556
TP558
TP559
TP560
TP551
TP552
TP553
TP554
E
D
C
B
A
LSJB2065